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Original Contributions.

ANCHORAGE.

By J. N. Farrar, M. D., D. D. S., New York City.

Tipping of Anchorage Teeth.—In operations for correction of irregularities of the teeth, the first and most important consideration is the anchorage; not only should it be properly situated, but there should be an abundance of it. In our professional literature we often read of dentists whose experience has proved to them that *bands on teeth* do not permit sufficient anchorage for moving cuspids posteriorly, and that large plates are the best anchors.

So far as I have traced out the cases of these unfortunate dentists, I have alway found single tooth ferules were used as anchors, instead of two or three ferules united in some way by solder; or if clamp-bands were used, they were improperly applied, or else were not of a size that would embrace more than one tooth.

So long as a dentist does not understand the laws of anchorage-resistance, and the philosophy of applying anchors upon the teeth, he will very likely meet with trouble. There is always liability of moving anchor teeth by any kind of lateral force upon them, but tipping of teeth to an injurious extent seldom results from skilful hands.

There are cases where a single molar is sufficient anchorage to move a tooth, but it is not a safe plan unless the anchorage tooth is supported by contiguous teeth. In my own practice I make it a rule to use more than one tooth for anchorage, and generally embrace them in united ferules or clamp-bands. Ferules may be held in contact by solder, but a better plan is to connect them by wire, the ends being soldered to the sides of the ferules. Three teeth may thus be embraced with two ferules, the middle one having no ferule upon it.

Another point to be observed in nearly all cases is to have the force applied as near to the gum as possible. If a single tooth-band is used, the force should generally act from or upon *opposite* sides, and not from or to *one* side only, unless it is desirable to turn the (anchor) tooth in its socket. When more than one tooth is embraced in the band, the force may always be applied from or upon one side only, without danger of turning the tooth.

Plates covering the gums or roof of the mouth have their uses in cases where the teeth are few and scattered, and occasionally they are called for under other circumstances, but I think that they should never be used where the more cleanly and less injurious skeleton kinds can be successfully applied.

Side teeth can be moved alternately or posteriorly; therefore, whenever side teeth are to receive a force which will cause them to move posteriorly, if the space anterior to them is needed for evening up teeth anterior to the space, calculations should be made to guard against their return to their former positions, which would be liable to crowd the teeth again out of line. So also when the side teeth are drawn forward to close spaces, provision should be made for holding them forward for a considerable length of time, or until new teeth shall erupt posterior to and in contact with them. These remarks are especially applicable to those cases requiring the correction of protruding teeth, in which the side teeth are generally moved forward more or less, and are nearly as applicable to cases requiring the moving of front teeth anteriorly, which causes the anchor teeth to move posteriorly.

To be satisfied with simply evening the teeth or placing them in line, making no provision for preventing the return of overcrowding of the teeth, is not skillful, and such neglect is very apt to lead to disappointment. The teeth should be firmly held in their proper places by some kind of mechanism acting as retainer or as a matrix. The best mechanisms are small and consist of wires, or of ferules and wires united by solder, cemented into cavities or upon the teeth.

SUBLINGUAL MEDICATION.—Not only does the sublingual space absorb liquids, but it is well known that the whole body takes up liquids more or less readily in proportion to the vascularity of the region with which the liquid comes in contact.—*New Orleans Medical Journal.*

GOLD IN ARTIFICIAL TEETH.

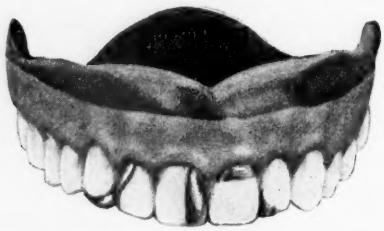
By Geo. T. Carpenter, M. D., D. D. S., Chicago.

Gold in anterior teeth of the young, or especially in those of people in middle life, is so common that it can be seen wherever we find people engaged in conversation; and it is not there from choice, but from an effort on the part of the wearer to preserve the natural teeth. With many persons these fillings become a part of their identity, and after wearing them for many years they look odd if the fillings are not seen. For this reason persons, after the loss of their natural teeth, make a demand on their dentist for gold in their artificial teeth and it is sometimes very hard to grant their request, as by the method usually adopted of drilling holes for filling in artificial teeth, the filling is either much smaller than the patient wishes, or the tooth is so weakened by the drill that it will soon break away.

I had a case of this kind a few years ago. The patient had been wearing a large gold filling in an artificial lateral, which was similar to the one that he had worn for years in a natural tooth, but the artificial tooth fractured and he lost both tooth and filling. He came to me with the request that I should insert a tooth in its place with a much larger filling than the one which he had lost. I tried to explain that the size of the filling was the cause of his trouble, but he either could not understand or would not be convinced, so I tried to give him what he wanted, drilled and filled a lateral, and fractured my tooth before I had finished my repair. It was at this time that I felt compelled to try something else, and after some experimenting I adopted my present method and gave my patient a filling which covered almost one-half of the lateral, and he was much pleased with my success. The method that I have adopted is to take a plain tooth of medium size and press (any surface that we may wish to put the filling

on) into moulding compound, or a clay prepared with glycerine. I then remove tooth and cast with a low-fusing metal into a rubber ring placed over mould, then reverse the die and cast more metal in rubber ring over first casting to form counter die. The metal last cast must be just hot enough to pour and not hot enough to unite with the first casting.

Now take pure gold, 30 to 32 gauge, and stamp between dies to the desired shape. Place this stamped gold on the tooth that you wish filled and burnish to place, letting the free edge of gold extend back into the wax, so that when the case is packed and vulcanized the rubber will hold the filling firmly in place. The filling can be trimmed to the size required, but care should be taken to keep the edge of the gold that represents the margin of the filling as straight as possible. This will prevent the edge from turning up after proper beveling down to the surface of the artificial tooth.



The accompanying cuts illustrate a pair of dies which contain five different moulds of the following portions of teeth, viz:—an anterior and a posterior approximal surface, a corner, a cervical or neck of central, and a cusp of a cuspid tooth.

These dies I keep in my laboratory and in a few minutes I can make a stamped filling of pure gold for any required case. The second cut is of a sample case showing the five fillings. I had this case at Niagara Falls four years ago and many of the profession had an opportunity of examining it. I have several of this kind of fillings in the mouths of patients, and they give good satisfaction and command a good price. Recently I had one of these teeth break off from a plate, but the gold filling was undisturbed. In repairing I simply ground in a new tooth and burnished the old gold to its surface.

THE EVOLUTION OF A SECTION REPORT.

By Chas. McManus, D. D. S., Hartford, Conn.. Read Before the New England and Conn. Valley Dental Societies, at Worcester, Oct. 23-25, 1895.

When the president of the Conn. Valley Society, with a diplomacy worthy of a better cause, arranged that I should make a report as chairman of Sec. I of that society, he must have had an idea of the peculiar propriety of linking a very small, narrow-gauge individual with an extremely large and comprehensive subject. I believe there is a formal etiquette about beginning any remarks on dentistry with the usual excuse for speaking at all. So if I have nothing else to offer, I have the excuse. I have usually been content to attend dental meetings and drink in the wisdom—and the malted milk—with the rest of the unassuming members, having no desire to approach the platform, except to pay my silent tribute, through the treasurer, to the profession. And yet, with all these good resolves which I have kept so well in the past and hoped to keep as well in the future—here I am.

Without taking up too much time to go into the minute history of this paper, I may say at once that, when I was told that if I would become chairman of Sec. I. and read a report under that head I could positively rely upon a paper at a meeting for which I was helping to arrange an alluring paper, I did not hesitate, but accepted the office. So last May, down in Connecticut, we had a most interesting paper from Dr. Barker, and you now have the alleged report, or what was to have been a report.

I accepted the duty and then looked up the section to which I had been assigned and found that it embraced Anatomy, Physiology, Microscopy and Histology, and I wondered why it stopped there, when it might just as well have gone on and included Bacteriology, Nomenclature, Literature and Jurisprudence. With breathless interest I looked up the other sections and observed that Sec. II. had four subjects, Sec. III. had three, Sec. IV. had four, and Sec. V. (poor unfortunate) had but two. It was all ight, I had my proper share and was content. There was also a sort of melancholy satisfaction in remembering that it took various parts of three different sections in the American Ass'n., with six different men, to cover my ground—and sometimes it isn't covered then.

At first I had the noble desire to write a letter to all members of the society, asking them to assist me in getting up a good report, and begging them to send me at once a promise for a practical talk, or a case in practice, or to demonstrate something connected with my section. But I did not do that because, even if I don't know much about dentistry, I know a lot about dentists. Every one of the gentlemen would have answered—if they had time—and the very few that replied would have said that they never wrote papers unless they had something to say, which would have been a rebuke to me.

In fact, a subject that included nearly all the fundamental principles of life, to say nothing of the basal principles of medicine and dentistry, with all the possibilities of modern scientific research as an aside, was an embarrassment of riches. True, I might have modestly selected some tiny corner of my great section and prepared a little paper. That was exactly the trouble, I had promised to make a report. Any one can make a report, even if it is nothing more than to report progress, but to write a paper really requires some ideas, and I didn't have any ideas.

Except a little judicious quizzing at a certain formative period of my career, I have nothing to say about Anatomy or Physiology—that is fit for your ears. And my lack of knowledge of them dwindles into insignificance when I consider what I do not know about Microscopy and Histology. Think of a chairman of such a section as mine who has to admit that he does not own a microscope.

Pardon me if I quote from a little paper by Dr. Burchard in which he says, speaking of microscopical technology:—"Even a little practical instruction in this direction is better than none at all. There is no reason why it should be little, for it is quite possible to have extensive enough a course provided by colleges to make a student something of an adept in microscopical technology. * * * * The only way to familiarize him with pathology is to have him see and think from what he sees, and to know abnormalities he must know the normal. Complete familiarity with these matters is not an ornamental accomplishment, and I hope the day will come when every dental graduate will own a 1-14 Zeis' homogeneous immersion objective (whatever that is), and may the day come before a better glass displaces this one." And I hope so too.

But to return to my subject, or to one of them. At this period in the evolution of my article I had nothing to say, but Dr. Barker would not let me off on my promise, and very properly too—he had delivered his goods. So there seemed nothing left for me but to join that devoted band that can make themselves felt in dentistry only by "the continual infliction of papers of but little general interest and of doubtful practical application," as a recent editorial very prettily puts it.

So for a time I allowed the matter to rest, I did nothing. I left it to see what nature—human nature—would do. It always does something and it sent me to a meeting at a place which shall be nameless, held for a purpose which I need not mention, and I heard a middle-aged practitioner of medicine make the statement that so far as the teaching of Anatomy and Physiology to dental students was concerned, the physician—the general practitioner—could take care of that, with the practical dentists for the dental branches. So it had come to this, that the busy, hard-working, family doctor could, between his case of croup and measles, "put in" his little hour teaching Anatomy and Physiology to dental students. And so might such a one, and the boys and girls (they go so young to dental colleges nowadays that I may fitly use the terms) that were compelled to attend such lectures would sit on the back rows and muse on the blessing of him who first invented sleep, and, finding the subject under such a teacher tedious and unprofitable, they would do their dissecting in a careless and rapid way, and at the end of the course would vote that Anatomy was dry and Physiology a bore, and endeavor to sell their books to some of the unsophisticated freshmen.

Mind, I don't say that such a teacher of Anatomy or Physiology ever existed, least of all in a dental college, but the above remark was made and seemed to be acquiesced in by men whose position should at least guarantee intelligence, although I know that to guarantee anything connected with dentistry is unprofessional.

As Dr. Kirk has said, in one of those papers that serve to make our dental literature really literature:—"Professors may be had for the asking, but expert teachers are a rarity." And again, "It is being felt more and more strongly that the training required to fit a man for the practice of dentistry is a peculiar one and requires a curriculum adapted to that end."

When a boy goes to a dental college he usually goes there to become a dentist (the exceptions when he wishes to be an oral surgeon or stomatologist may be noted), and the general subjects of Anatomy and Physiology have an added interest when they are taught by an anatomist or a physiologist in thorough sympathy, through thorough knowledge of dentistry. I don't think it is necessary to put it quite so strongly as the president of the National Ass'n. of Dental Examiners does when he says—"And may the day come when every professor in every (dental) college throughout the land shall be a practicing dentist," but I think that if such time could ever come it would not be an evil day for dental colleges.

Such teachers can have much to do with making students remain, all through their lives, students who will not hang up all desire for real study, research, and original investigation with their diplomas on the wall. They have it in their power to so influence the mind of the young dentist that, if he had any money left after he bought his bicycle, he might get a microscope and become in time fit to be a chairman of the section over which I have the honor, but not the requisite qualifications, to properly preside. Such teachers, aided by the laboratory method of dental education, not only in the so-called practical branches, but also in all the branches of my section, will have much to do with making it impossible for any one, in the future, to get up in a great meeting and ask "*if the average dentist is not an ignorant man;*" or for any one to rise up and eloquently bray "that ninety per cent. of the dentists were a disgrace to their profession."

On the other hand, Dr. Perry, in one of the most delightful professional papers ever written, says: "We are weary to the last point of endurance * * * * of being told that we are a very scientific body of men, and that our profession is a very exact one. We are tired of being told this because deep down in our inner consciousness we know that it is not true."

There is probably a happy medium between these two positions for the future average dentist, and the laboratory method in dental education is going to have a great deal to do in helping to attain it.

To quote again (and let me remark in parenthesis that I don't know what I would have done in evolving this paper without the

quotations; they are the only parts with which I am perfectly satisfied): "It has been found by careful test and examination that *intelligent* laboratory training means for the student something more than dexterity and manipulative skill. Wherever it has been applied as an educational means, manual training has resulted in increased intellectual status, a brain cultivation fully the equivalent of the manual dexterity which is incident to it."

The practical attainments of the so-called "American dentist" have become somewhat proverbial, but when we consider that they are, to a greater or less degree, what he owes his patients—it is his work. It is expected of him, and for it he gets praise, thanks, and incidentally what Dr. Barrett would call an "honorarium."

The intelligent scientific cultivation suggested above is perhaps (to judge from the reports of some recent discussions) not as yet a proverb in general use, and yet it is, to a certain extent, what he owes that body which we all so love to call "The Profession."

I look at this for the moment as the chairman of a scientific and theoretical section of a learned society. I look about me and see the chairmen of the sections including Operative and Prosthetic Dentistry gloating over their clinics and endeavoring to please you with the latest fall styles in bridge-work. I can grow cynical and suggest that all I can study of interesting clinics are occipital bones, but that, of course, is simply to show my superficial anatomical knowledge and my chagrin. The truth is, that practical men will always take the most interest in practical subjects. And yet it has been the interest taken by some dentists in subjects seemingly theoretical that has led to many very practical results.

"It is passing strange that among the thousands of dental mechanicians who delight in styling themselves scientific men, there has never until very lately been one to institute a series of experiments conducted for the purpose of determining the force necessary to the proper performance of the function which it is their special province to assist." Reference is made to Dr. Black's recent articles on "The Physical Character of the Human Teeth."

Towards the close of the final report of the Examination of

Prehistoric Crania, conducted by the late Dr. Patrick, is said:—"The importance of the investigation cannot be overestimated, especially that portion relating to disease and anomalies of the teeth and jaws, for there is not a question that may arise in Morphology, Histology or Physiology, on which the facts revealed in this investigation will not shed some light."

In commenting on this work to which Dr. Patrick gave many years of his life, Dr. Kirk says:—"Such work is a necessary preliminary to all truly scientific study, and while its value may not at once be apparent to everyone, the fact remains that the men who, at great personal sacrifice, pursue investigations of this class for the benefit of their colleagues, deserve their thanks and praise."

That investigations of this nature are being conducted, and papers of this class are occasionally read, may be seen from this list of a few comparatively recent articles, assorted. [The Doctor here gives the titles of several of the leading articles which have appeared in the various dental journals during the past few months; also the titles and short synopses of some recent publications. Ed.]

It is to the interest and enthusiasm on the part of such men, in the subjects connected with this section, that dentistry owes, and will have to owe, very much of its professional standing. It was to the result of this enthusiasm in a young dentist that the whole dental world pays homage to the memory of Sir John Tomes. It was to such enthusiasm on the part of another young dentist that the world owes the priceless blessing of anæsthesia.

In closing I can only thank you for your polite endurance, and express the hope that nothing I may have tried to say may have been other than within the bounds of the strictest professional propriety, or have a tendency that might in any way mislead the young men.

A DISCOVERY?—The fact that animal tissues can be stimulated by gradually increasing doses of a poison until they fail to respond, is heralded to the world as a great discovery, which it is proposed to use as a basis in perfecting a therapeutic system. In other words, saturate the system with poison, so that if a man is exposed to disease his tissues can no longer take cognizance thereof. This is about as rational as keeping a man drunk all the time that he may not crave liquor.—*Medical Brief.*

DENTAL EXAMINING BOARDS IN THE UNITED STATES AND PRELIMINARY EDUCATION.

By G. Carleton Brown, D. D. S., Elizabeth, N. J., Read Before the Central Dental Association of Northern New Jersey, December 16, 1895.

A resume of the question in regard to the influence of examining boards on dental education would necessarily become a history of the advance of modern dentistry, and in saying this and in claiming a large share of this advance for the examining boards, I do not mean to detract a particle from the great work that has been done by the colleges; to them, first and foremost, belongs the credit for the advanced standing of the profession of dentistry to-day. But I greatly doubt whether the colleges would have attained to their present standing, or have demanded the high standard now required of graduates, if it had not been for the examining boards. There are several ways of loooking at why and how this influence came into existence, but I think the most rational is, that the colleges are not working entirely from a philanthropic standpoint, while the examining boards are. The colleges are pecuniarily interested in their work, and are, of course, striving to make all the money they can, and in some cases more than they have any business to make—but, as Rudyard Kipling says, "that's another story"—while the members of the boards are sacrificing much time, and in nearly all cases are spending their own money to elevate the standard of their profession, and this without the slightest chance of any pecuniary benefit to themselves.

These facts being accepted, with the further statement that in spite of the antagonistic attitude assumed by some of the colleges towards the boards, the latter have none but the kindliest feelings to the colleges, and when they make criticisms and suggest certain reforms it is not because they love the colleges less, but their profession more.

The elevating of the standard of dentistry demanded by the profession must be done to a great extent by and through the educational mediums, and, as public institutions, they are certainly open to criticism if they fail to properly equip their graduates.

Any one who has been an unprejudiced observer of the changes

in the teachings of the schools and the character of the material turned out since the establishment of the State examinations, must admit that the boards have had an influence on the colleges, and in many instances have been the means of procuring for the student a higher and better education; which being the case, is it not the duty of the boards to continue the work by pointing out the defects which still exist, and by suggesting reforms?

The only question that now arises, is: Should these discussions be confined to the national associations representing the colleges and the boards, or should the matter be openly and freely discussed by the profession at large? I consider the latter the proper course, hence this paper.

A few years ago it seemed to be the fashion for a man, when he thought he could not make a success of anything else, to either enter the ministry or else take up dentistry as a profession; if the latter were his choice, the mere fact that he had not the preliminary education that would enable him to receive and assimilate the scientific and theoretical teachings of the profession did not enter into the question any more than did the fact of whether he had the requisite amount of mechanical adaptability.

The colleges recognize this state of affairs by theoretically requiring a preliminary education; I say, theoretically, for what they actually require hardly deserves the name of education.

In making these charges I do not say that some schools may not give a proper preliminary examination, but I do know that the examination, if it exists at all in certain schools, must be a perfect farce. In making this statement I know I shall be borne out by members of any examining board who require a written examination. To demonstrate the point I will give you a few illustrations which were taken from the papers of recent graduates and are exactly as written, none being selected unless plainly written, so that no mistakes could be attributed to defective penmanship.

Q. What relation to dental caries do the micro-organisms bear? A. Dental caries is a destruction of the tooth substance which is hard and micro-organisms is effect the soft parts of the body.

Q. What acid is produced by the micro-organisms? A. Toxic acid is produced by the micro-organisms.

Q. How? A. By the action of them upon the soft tissues, these be open.

Q. What is plethora? A. Is a disease of the Pleura.

Q. What is disease? A. Is the disturbance of the equlebrum or preversion of circulation.

Q. What is fever? A. The riseing of the tempeture caused by too much blood in a part.

Q. What is shock? A. Shock is the suddent checking of the nerves caused by accident.

Q. What is the difference between a narcotic and hypnotic? A. Narcotic acts on part the small intestines. Hypnotic acts on the whole large intestines.

Q. What are the stages of anæsthesia? A. drowsiness sleepy feelings long breathing Stifness of muscles and relaxation of the parts.

Q. What are the effects of inhaling nitrate of amyl? A. It produces krowness.

Now as to a student's mechanical adaptability, granted a first-class education and the receptive qualities necessary for a good scientific education, of what avail is it if "he hasn't it in his fingers," as Dr. Eaton has so tersely expressed it; he will never make a dentist; and of this fact the colleges have as yet taken no notice; they might perhaps refuse to graduate him at the end of his three years' course, even if he stands first in his class in theory; but would they do this? And if they did, would it not be pretty hard on that student? But is it not worse to have an incompetent man turned loose upon the public? And here is where the examining boards come in again; as our friend and fellow hornet, Prof. Flagg, says, "The Board steps up and says 'Hold,' and the young man steps out into 'innocuous desuetude,' with three of the best years of his life wasted."

This is certainly hard on all concerned, the Board, the college and the student. But, hard as it may be, the Boards must do their duty as State officials and as servants of the public. There is no question about its being hard on the student; the college from which he graduated should feel a twinge of remorse for having taken his time and money and failed to give him what he has paid for. It may have done all in its power, but if the student did not "have it in his fingers" to start with, all the colleges in the

country could not have given it to him, their mission being only to develop. Where is the remedy? Many, I am sure, must have given the subject thought, but the first practicable suggestion that I have seen comes from Dr. Crouse, who says: "A young man may be bright, a good student, and well grounded in the classics, and yet an attempt to make a dentist of him would destroy his usefulness in life, make him a detriment to the community in which he practiced, and not a credit to the dental profession. Therefore, the first six weeks of the college course should be spent in finding out who are properly qualified, by nature as well as by training, to be dentists; and those who are not fit should have their fees refunded, and should be persuaded to select a more suitable calling in life. In short, the 'plucking' should be done at the beginning of the college course rather than at the end." Here is something for the Faculties to think about, and by adopting some such system they will save the Boards many unhappy moments.

And while they are occupied with this subject it would be well to look more carefully after the training of the students in the practical departments. It is a noticeable fact that since the increase of the term of pupilage from two to three years, while the scientific and theoretical knowlege of the graduates has increased to a marked degree, the practical has not only failed to keep pace with it, but has actually decreased. Are we, as a profession, sacrificing the practical to the theoretical? Whoever are leading in this matter, the profession or the professors, damage is being done and a halt should be called.

According to the reports given by the students, the means and apparatus in some of the colleges for pursuing the practical studies are absurdly inadequate, in some instances there being only one blow-pipe for the use of several hundred students, with in many cases no chance of obtaining instruction in its use even then; the demonstrator, so-called, being engaged in the more important (?) work of looking after the business part of the insertion of artificial dentures for a consideration, said consideration, by the way, netting a good round profit to the college. In fact, the colleges seem to be giving instruction only in the direction in which there is a direct pecuniary benefit to themselves, instead of educating the student to a higher standard of general proficiency in mechanics. I have had graduates tell me that the case they

soldered before the examining board was the first piece of metal work they had ever done, and one man acknowledged that he had never had a blow-pipe in his hand before. The colleges may say that this evidence is not trustworthy, as it comes from men who, having made a poor piece of work, are trying to throw the responsibility on the college. This might have more weight if it were not for the fact that the story comes from so many different graduates and is so amply corroborated by the work they do at the examinations. If you will carefully examine the specimens which I herewith submit, I think you will come to the conclusion that there are reforms needed in this direction. These have been selected and mounted by Dr. Barlow, who has charge of the mechanical department of the New Jersey Board, from work done within the last year as part of the practical examination required from each applicant. Have the men who did this work received a proper education to enable them to practice dentistry?

I think this will prove to your satisfaction that in some cases the practical side is being sacrificed to the theoretical. That others have noticed the same thing is shown by the following extract from the report of the Committee on Practice of the New York State Society, read at Albany, May 8th, 1895. "Our institutions of learning should take heed that the manual skill of their graduates does not suffer on account of increased theoretical training." The colleges may claim that every student has to submit a satisfactory piece of metal work as part of his examination and a prerequisite to graduation. True, but do they inquire carefully into the question of who made the piece? That, however, is part of the other story I am coming to later.

Leaving the mechanical department for the operative, we perhaps find an improvement. But, does not the effort to swell the college treasury overbalance the educational features? Are not many teeth, which by proper treatment could be saved, sacrificed to make way for other work that will pay better, thus doing injury to patients and depriving the student of an important means of education? How many students, when they graduate, are really competent to contend with the complicated cases of pulpless or abscessed teeth? If any of you will stop and think of the many difficulties you have had to contend with and master for yourselves since you commenced active practice, that could have

been greatly simplified by proper instruction from a demonstrator during your collegiate course, you will better appreciate the point I am trying to emphasize.

Is it not just as important that there should be a competent corps of demonstrators as of lecturers? Now, as a rule, there is one head demonstrator whose duty it is to apportion the patients and handle the gold and cash, which occupations leave him little time to assist and advise the students in their work, these latter functions being left to undergraduates, who are appointed assistant demonstrators. If the colleges would provide a sufficient number of first class demonstrators to be constantly on hand during clinic hours in order to personally instruct students in the correct diagnosis and treatment of cases, the percentage of failures before the examining boards would be materially decreased. These remarks will apply equally well to either department of the practical education in our institutions.

While on the subject of college clinics I cannot resist again alluding to the matter of fees. The present system in many institutions of having fixed prices for operations, places them about on a par with the so-called "associations" which have done so much to lower the standard of dentistry in the public mind. In both cases the bulk of the work is done by inexperienced and incompetent men; in the associations, because that kind of help comes cheap; and in the colleges, because the workmen are students. These methods have taken away any right which the clinics might once have had to be called free.

One means of cementing the colleges and the profession more closely together would be for the former to return to the old method of simply charging for the material used and making the clinic a dispensary in the true meaning of the word.

The method of procedure in the mechanical examination before the New Jersey Board is as follows: Every candidate is required to make a metal plate, band it, grind and back the teeth, and invest ready for soldering before the Board. Sometime since it became apparent that in a great many instances the character of the preparatory work and the final soldering differed so markedly that it was impossible that the same person should have done both. This led to an investigation and it was found that there were persons who made a regular business of supplying students who were to appear before the Board with plates ready

for soldering. It was also found that these same persons were in the habit of making the graduating cases for students in the colleges, charging them different prices according to style and finish. The Board met this difficulty by requiring each applicant to make an affidavit stating that he did all the work on his plate himself, without assistance from any one.

The fact that a student can buy a plate, present it and have it accepted as his own work in college, certainly confirms my previous statement as to the lax way in which the clinics are conducted. A demonstrator in the mechanical department certainly should know whether a graduating piece was made in the college laboratory or not. But worse even than this comes the report that in some cases the demonstrators have themselves made these plates for the students; they, of course, being paid for the same.

Another reported condition of affairs in one of our colleges seems to me, if true, to deserve such unqualified disapproval from the profession that a continuance of such practice will henceforth be impossible. It is, in short, that a certain dental house holds such a large interest in one of our colleges that the students say they dare not buy instruments from other houses, because by so doing they would jeopardize their chances of graduating. If this report is true, taken in connection with the other matters which I have laid before you, is it not time that the profession at large insisted on knowing more about the way in which our institutions are conducted, and, where reforms are needed, insist on their not only being introduced, but lived up to?

In conclusion, I wish to state that no charges in this paper have been aimed at any particular college; the defects mentioned being distributed among the different institutions. There are some, however, that may, perhaps lay claim to all. On the other hand, there are certain colleges to which these criticisms are in no way applicable.

Let the Profession, the Colleges, and the Boards unite their forces and work together in this matter, and a higher standard is bound to result.

A CURIOUS ACCIDENT.—A woman in Elizabeth coughed up a wisdom tooth which had been lodged for three months in one of her bronchial tubes, and which had found its way there immediately after it was extracted and while she was under the influence of nitrous oxide gas. The name of the careless dentist is, fortunately for him, not given.—*Medical Record.*

Digests.

Dr. G. V. Black's Articles in the Dental Cosmos, 1895.

AN INVESTIGATION OF THE PHYSICAL PROPERTIES OF SILVER—TIN ALLOYS. A series of experiments has been carried on by Dr. G. V. Black, during the past year, to investigate the value of amalgams as filling materials for human teeth. The experiments have been made with pure silver-tin amalgams, and with those made of silver and tin as a basis, with an addition of small quantities of various other metals—gold, platinum, iridium, copper, zinc, bismuth, etc.

The specimens for use were furnished by many prominent dental manufacturers, and made of pure materials. The proportions ranged approximately from sixty parts of silver with forty parts of tin, to forty parts of silver with sixty parts of tin, the alloys being mixed with mercury in proportions ordinarily ranging from 30 per cent. of mercury with 70 per cent. of alloy, to equal parts of each by weight.

Careful experimentation proves the silver-tin amalgams to be amomalous among metallic compounds in being at the same time very brittle and very ductile. If struck with a hammer they fly to pieces, but if subjected to a comparative light stress, either continuous or remitting, they may be pressed out into thin laminae, or moulded into any form without breakage.

A careful study of these properties was made with the use of specially constructed instruments, and the effects of stress accurately measured. Under a stress of 200 to 300 pounds the amalgam crushes, but if a stress of 25 to 100 pounds is maintained it gradually yields. This property of yielding under stress Dr. Black calls the flow. It is different from the "flow of solids" in that it is continuous as long as the stress is maintained, even if there is no increase of stress. Examinations and experiments with pure silver and pure tin, and with an alloy of the two in equal parts, prove conclusively that this property of flowing results not from the combination of the two metals, nor from either one alone, but from a combination of the two with mercury.

Experiments with amalgams mixed and used as different dentists mix and use them, with various methods of manipulation, gave astonishing variations as to the flow. Pure silver-tin amalgams were found, under careful handling, to flow from 2½ per cent. to 10 per cent., but the addition of a small percentage of copper diminished the flow. The crushing strength of the alloys in general use is sufficient for the stress brought to bear in mastication. The important test of an alloy is its resistance to change of form.

Under a series of more accurate experiments, where the formula of each specimen used was known, the alloy and mercury both weighed, the amount of mercury lost in mixing and in the process of wringing through muslin, the percentage of mercury left, all being recorded, and the amount of force used in filling and packing carefully noted, gave more regular results. It was shown that the strength of the mass depends in great measure on the even distribution of the mercury, and that violence in any form weakens the product. Even burnishing of fillings is therefore to be avoided, and hand-mixing, instead of mixing in a mortar, is to be preferred for this reason.

Experiments with ivory and bone as artificial cavities for experimental fillings have proved unsatisfactory, as these materials expand and contract, being influenced by the moisture in the atmosphere, and it is impossible to accurately measure changes in filling-materials in cavities whose walls are themselves subject to variations. Therefore, a set of steel tubes for artificial cavities, and special instruments for accurate measurement, were devised for further experiments, that results might be compared. Amalgams were found to first set hard, generally with an accompanying contraction, then after several hours they soften and flow, and at the same time expand. Afterward a gradual contraction occurs.

Experiments involving the principles of spheroiding of amalgams demonstrated accurately that the tendency of amalgams to pull away from the margins of cavities is due to contraction, and not to a tendency to spheroid, as has been supposed.

Contraction and expansion of amalgams seem to depend on many factors:—the components of the alloy, the percentage of mercury, the manner of mixing, the mode of handling, and the oxidation of the alloy.

The addition of copper in small quantities to the silver-tin amalgam neutralizes the tendency to contraction and expansion to a considerable degree. The addition of small quantities of other metals has not yet been thoroughly investigated.

In silver-tin amalgams containing less than 60 per cent. of silver a contraction takes place during the primary setting of the mass, but after reaching a proportion of 60 per cent. the primary contraction disappears. Alloys which contain more than 60 per cent. of silver show no primary contraction, but at 80 per cent. of silver and 20 per cent. tin an immense expansion occurs.

As to the difference in the cut of alloys, those cut fine gave an amalgam which worked smoothly, but flowed badly, while the coarse cut alloy made a granular mass which did not work so easily, but which flowed less. The effect of oxidation on the cut alloy, which occurs even on simple exposure to the air, was very marked, both upon the contraction and on the amount of mercury required for mixing. Alloys containing from 60 to 65 per cent. of silver, which did not shrink nor expand when used fresh, when oxidized from any cause contracted as much as nine ten-thousandths of an inch for each test. The effect of oxidation was practically the same for all formulæ used; those which shrank when used fresh shrank more when oxidized.

Careful trial has shown that if an alloy is mixed with an excess of mercury, kneaded into a pliant mass, and then wrung out through muslin, always as nearly as possible with the same amount of force, a certain percentage of mercury will be retained, differing with the different formulæ of the alloys. A sufficient excess of mercury must be used to make a pliant mass, and it must be wrung out before the setting begins. If too little mercury is used an *excess* will be retained, but mixing considerably too much mercury before wringing does not affect the result. The freshly cut alloy retains a certain percentage of mercury against the wringing process, but oxidizing the alloy, whether naturally or artificially, changes the result. For instance, the alloy, 65 per cent. silver, 35 per cent. tin, when oxidized, requires less mercury than when used fresh. A good working mass can be made with a smaller quantity of mercury at about 60 per cent. of silver than with any other proportion.

Different methods of manipulation affect the result mate-

rially. An even and moderately severe pressure, directed upon every portion of the mass, without kneading it, tends to prevent shrinkage at certain points. Gaps in the margins of fillings, caused by shrinkage, are not closed by subsequent expansion. Using a spoon-shaped instrument and cutting out the free mercury raised during packing, has a better effect than any other method, as it requires less violence. In packing and filling, the part of the amalgam put in last is found to contract most, causing a warping of the mass, so that the upper surface of the filling becomes concave and the margins pull away at the top, while the bottom surface, especially if large and flat, becomes convex, thus pushing the filling out of the cavity. Dr. Black considers his investigations far from complete as yet.

The Pacific Stomatological Gazette for January, 1896.

"DENTAL JURISPRUDENCE—MALPRACTICE," by H. R. Wiley, A. B., San Francisco. It sometimes happens that a fracture of the maxilla results from the extraction of a tooth, and the records of our courts show that many civil suits for damages have been instituted on that ground of complaint. If the fracture has been caused through negligence or ignorance, it is certainly a proper cause of action. Of course, the plaintiff must make out his case. That is, he must prove that the injury actually exists, that it was caused by some act or omission on the part of the defendant, and that it was due to malpractice. He must also prove the extent of the injury. The plaintiff may be under an honest misapprehension as to the existence of the injury. When the tooth was extracted he saw what appeared to be a piece of bone attached to it, and very naturally inferred that his jaw had sustained a fracture. Unusual trouble, from cold or other cause, having followed the extraction, he too hastily concluded that he had been the victim of malpractice, when a careful and scientific examination might have disclosed the fact that it was only the fracture of the alveoli septum. The composition of the cementum is very similar to that of the bone, and occasionally the roots of the tooth become attached to the septum and fracture it in course of extraction. Such an occurrence shows no want of care or skill on the part of the operator, and judgment for his costs should be rendered in favor of the defendant.

Again, a fracture of either plate of the alveolus may be due to the extraordinary attachment thereto of the roots of the teeth; or the bones may be unusually weak and thin, or may have been weakened by necrosis. Also, during the spreading of the alveolar plates caused by extraction, a fracture of either plate is likely to occur, if the roots of the tooth chance to be unusually divergent, and wider than the necks, without fault of the operator.

In neither of the cases referred to above could there be a finding of malpractice, supposing, of course, that a proper defense is made. If the patient, by a change of position, a sudden movement or any other act, contributed to the injury complained of, judgment ought not to be rendered against defendant.

The facts relied upon as a defense in either of the several cases referred to, must be clearly presented and carefully proven, or the judge or jury, not having technical knowledge of dental surgery, may easily fall into error as to the real nature and cause of the injury complained of, and consequently arrive at a wrong conclusion as to the defendant's liability. The extracted tooth itself may be valuable in evidence, and it may be necessary for the judge or jury to make a careful inspection of the part alleged to have been injured.

Such exhibits, accompanied by a full and clear explanation by the defendant, may be sufficient to convince the jury that the charge of malpractice is without foundation. It will always be safest, however, to corroborate this line of evidence with expert testimony, by calling to the witness-stand some other dentist who has first been made acquainted with the facts of the case.

"SYPHILIS OF THE MOUTH," by J. G. MacGowan, M. D., Los Angeles, Cal., read before the Southern Calif. Odont. Society, Oct., 1895. The interest to the dentist in being able to definitely diagnose any appearance of syphilis about the mouth is a double one:—The protection of self against contagion; the avoidance of the exposure of his clients to infection by the use of instruments or dressings not sterilized. Though recognition of the infectious lesions of acquired syphilis is paramount, yet it is not without interest to dental surgeons to be able to trace the influence of inherited syphilis upon the growth and development of the teeth, and also to understand the rapidly destructive and frightfully defor

mative nature of the lesions peculiar to late syphilis. There are three truths relating to buccal syphilis which may be deemed axiomatic: First. Certain lesions, well marked and distinct when present, always and invariably indicate the presence of syphilis; Second. Syphilis is frequently non-venereal and innocently acquired; Third. The victim is frequently unaware of the character of his malady. Remembrance of the first of these will prevent your judgment being warped by the social position of your clients. Attention to the second will keep you from cruelly misjudging good women, and sometimes good men. Consideration of the third will account for the apparent moral callousness of people whom you may see spreading the disease by their foul and poisonous mouths. For our purposes, the mouth is all of that mucous space included between the lips anteriorly and the posterior pillars of the fauces, together with the various organs contained therein.

Certain cardinal characteristics of syphilis occurring upon the skin or mucous membranes have been formulated by Kaposi:— First. The syphilides are sharply defined, dense and uniform cellular infiltrations of the papillary body and the corium, and differ from one another only in size. Second. These cells are not fitted to undergo permanent organization into connective tissue, but always undergo involution and disappear by absorption or by purulent degeneration. Third. The syphilitic infiltration always enlarges and disappears in the same direction, centrifugally; hence, the peripheral parts are relatively the most recent, and exhibit all the characteristics of the fresh infiltration. The oldest parts occupy the center and are the first to disappear. To the initial syphilide, the chancre, as it occurs about the mouth, we will first give our attention. Most usually the point of infection is the lip, by preference the lower lip, at its vermilion border, for this is most exposed to the injuries or abrasions through which infection takes place; chaps, cracks, the broken vesicles of herpes, bites, burns from pipes, cigars or curling irons, cuts from broken drinking glasses, razors or carelessly handled dental burs or gouges. Any sore occurring in this situation, with scant secretion, painless or only moderately painful, with a circumscribed indurated base varying in grade from that of parchment to cartilage, which refuses obstinately to heal under the application of simple protective measures, but steadily persists while the days

run into weeks, becoming finally covered with a greyish pseudo-membranous deposit, is a chancre. Such sores are generally single; but multiple ones are not rare. When they exist they are due to the application of the virus simultaneously to several spots of abraded surface. Whatever their number or situation, they give to the lip a stiff and clumsy look not to be accounted for by the size of the ulcer. It is rather the sharply circumscribed and growing infiltration of the tissues which gives the characteristic appearance.

The diagnosis of typical cases of chancre of the lips need only to be made from cancer. The points of diagnosis to be remembered are well tabulated by Cornil: CHANCRE OF THE LIP. 1. Occurs at any age. 2. Usually insensitive. 3. Has a regular outline. 4. Is elevated. 5. Grows only a few weeks. 6. Submaxillary glands involved in second week. 7. Heals under mercurials. EPITHELIOMA OF THE LIP. 1. Seldom before middle life. 2. The seat of darting pains. 3. Irregular in outline. 4. Ragged and bleeds easily. 5. Grows many months. 6. Submaxillary glands involved only very late. 7. Not affected under mercurial treatment.

To this I may add I have observed that in labial cancer, usually over the peculiar waxy and curled edge of the ulcerated surface, may be seen climbing the distorted and twisted blood-vessels, and plunging into the depths of the growth to disappear as do the blood-vessels in certain diseases of the optic fundus. From herpes the lack of induration and the burning sensitive surface forms a sufficiently distinctive diagnosis. From inflamed fissure the painful character of the latter, and the lack of involvment of the lymphatics under the jaw, serve to guide us. Within the mouth cavity the most frequent seat of the chancre is the tip or anterior portions of the sides of the tongue, the tonsils, and the inner surface of the cheeks. In these positions some of the distinctive characteristics of the chancre are so modified that the diagnosis is not always readily assured. Relating to the tongue: If a single and insensitive ulcer or fissure upon its anterior surface persists for a week, refuses to heal under application of stick nitrate of silver, enlarges, extends continuously, develops an indurated base and becomes covered with a pseudo-diphtheritic membrane, it is a chancre. But many ulcers in this situation are

not chancres. We may have an ulcer due to the abrasion and irritation of a jagged tooth, the so-called dental ulcer. This disappears with the removal of the cause. It may be an ulcerating gumma. If it is, we can always elicit a history of a preceding tumor under the mucous membrane, opening in the center, the development of an ulcer in a tumor and not of a tumor surrounding an ulcer. It may be tubercular. If so, it has commenced upon the surface as a number of pinhead-sized, yellowish or pearl-colored buttons of miliary tubercle, raising the mucous membrane. Such nodules present a tendency to break down separately, running together as irregular and superficial painful ulcers with worm-eaten bases. I have once seen the symptom which, when present, is so characteristic of tubercular ulcers, that of uniting at the bases while having bridges of sound tissue on the surface, underneath which a probe might be passed from one ulcer to another. Besides, in tubercular trouble there is always evidence of tubercular cicatrices upon the neck, or tuberculosis of the larynx or lungs; or the bacilli may be found in the scrapings of the ulcers. In neither the gummatous nor the tubercular ulceration is there ordinarily enlargment of the submaxillary glands.

Chancre of the tongue can hardly be mistaken for cancer of the tongue. The latter is nearly always preceded by an indurated patch of leucokeratosis, or an old and much irritated dental ulcer. Chancre is rare upon both tonsils, and has been in all cases which have been observed by me presumptive evidence of osculatory immorality. Situated upon the tonsil it may be confused only with sarcoma. The latter is of much slower growth. The chancre reaches the limit of its size in, at the most, six weeks, and then subsides or becomes converted into a mucous patch. Again, the chancre has a crater-like excavation upon it from the beginning, and is accompanied early by the indurated enlargement of the sterno-cleidomastoid chain of lymphatic glands. Anywhere between six weeks and six months after the initial lesions of syphilis there appear the various manifestations of the disease upon the skin and the mucous membranes known as secondary syphilides. Those which concern us most are the moist and the dry eruptions in the mouth. Some observers insist that the first local sign of general syphilis is the appearance of an erythematous rash in

the mouth and throat, corresponding in color and just preceding in time the macular syphilides upon the abdomen and chest. These consider that the presence of narrow, dusky-red bands of inflammation along the border of the velum, and ending abruptly at the base of the uvula, is characteristic of syphilitic erythema. Though I have at times observed this brick-red erythematous arch in people, the victims of syphilis, its appearance has not been sufficiently distinctive for me to place any special diagnostic value upon it. Deville and Devasse first gave to the usually elevated, rounded, pink-edged, moist lesions with pearl-like surfaces, the name of muscous patches, from their manifest resemblance when situated upon skin surfaces to mucous membranes. These patches in the mouth, frequently the earliest to come and the last to depart, may at times be the only sign, after the chancre, which ever presents itself of syphilis. But their danger to you lies in that the smallest and most innocent-looking patch may convey the poison of the most virulent attack to its recipient.

I know of no lesion of syphilis which occurs in males and is absent in females. However, these secondary syphilides of the mouth are less common, and commonly less severe in woman than they are in man, for she keeps her mouth cleaner than he does, seldom uses tobacco, and less frequently uses raw spirits and irritating sauces.

The changes observed are due to vascular dilitation, infiltration of embryonic cells and a fibrinous exudate loaded with young cells and pus corpuscles. It is to their deposit upon the surface that the common opaline appearance of the moist greyish pellicle is due. These patches in jaundiced individuals partake of the yellow stain of the rest of the tissues. They are always preceded by surface redness, and they present a tendency to the modified circular forms peculiar to syphilis, and are accompanied by hypertrophy of the tonsils. This membrane is thin and may be removed only with difficulty. It is distinguished from diphtheria by the absence of the inflammatory symptoms and the physical depression, and by thicker, tough, buckskin or buff-colored membrane of the latter; from thrush by its raised white patches with a red areola, which consists of pultaceous matter like curds, breaking readily upon being touched, and containing the fungus, oidium albicans. The characteristic shape of these patches, and

to some extent their appearance, differs with their situation. Painless usually, when at the angles of the mouth, or when irritated by tobacco or a jagged tooth, they often become very painful. Without appreciable induration, when arising upon the surface of a disappearing chancre the suppleness of the tissues beneath the patch is much interfered with. Certain portions of the mouth are most prone to be the seat of the mucous patch; upon the inner surface of the lips and the cord between the two halves of the upper lip; at the angles of the mouth, where it presents a peculiar diagnostic feature; upon each lip a patch joined at the commissure by a deep rhagade, which is painful and bleeds easily, the inner surface opaline, the outer a granulating sore covered with a crust forms a picture to be remembered and an object to be avoided. The patches upon the dorsum and the tip of the tongue are uneven in appearance, influenced by the varying sizes and length of the papillæ. Those at the edge, following the natural folds of the mucous membrane marking the muscle septa beneath, present sometimes an exaggerated ridginess. Far back upon the tongue large papular or warty patches sometimes occur. These grow and extend to the whole superior surface. The grossly exaggerated papillæ are separated by deepened ridges, running across and along the roughened tongue. Its opalinity is obscured here and there by the shaded brown, yellow and gray stainings of food and medicine, all of which give to the organ the appearance so happily described by Fournier as "the toad's back." I have seen these grow and crack, exuding a malodorous sanious fluid, and subdivide while growing, until the mouth became a nasty hole filled with a tongue that, for its poisonous state and aspect, might well be the despair of devils. These syphilides now under consideration rarely ulcerate; when they do the seat of such ulcer is usually at the angle of the jaw where the teeth impinge upon the tongue.

Upon the under surface of the tongue, and the gums, particularly those of the lower jaw where teeth were lost, I have sometimes met with another form of mucous patch differing altogether from those so far described to you. It is papular, round, elevated a millimeter or two, covered with a yellowish-gray and closely adherent membrane, which when removed by friction leaves a bleeding surface, and under the microscope consists of fibrin, pus

corpuscles and epithelial debris. In these cases, three only, the persons were tobacco users, never made a toilet of the mouth until instructed by me, and had all of them well-pronounced general syphilis. For purposes of distinction these may be classified as diptheritic mucous patches. Upon the tonsils and the pillars of the fauces mucous patches exist earlier and later than they do elsewhere. Though insensitive, the patient often not complaining of them when their appearance is frightful, they are very apt to ulcerate from irritation. These ulcers, owing I think to the structural formation of the tonsil, are likely to be kidney-shaped, but covered with the pearly pellicle so indicative of their origin. Follicular tonsilitis is nearly always an accompanying malady, due to the inflammatory glandular hyperplasia. Indeed, it has seemed to me that without this follicular disturbance we would rarely have in these mucous patches of the tonsil any ulceration whatever, for when they disappear it is without scars, leaving only the distended follicular mouths to remind us of the process. The palato-lingual fold is frequently the seat of the mucous patch. In this siuation, which is practically the commissure of the sphincter of the throat, they are commonly accompanied by a burning, rough and scratching pain, often very severe. My advice to you is, always in working about the back teeth of any person you may suspect of having infectious syphilis, to carefully examine the oral commissure and the glosso-tonsillary folds for mucous patches. Syphilis of the palato-tonsillary region is not at all constant in its manifestations of pain. Great pain is sometimes an accompaniment of small patches, and no pain not unfrequently is seen when the diseased area is great.

The region posterior to the pillars of the fauces do not concern the dentist, but, in passing, I may say that the syphilide we have had under discussion rarely occurs posterior to them. In the words of Fournier: "The pillars of the soft palate are the pillars of Hercules for the mucous patch, and this is the more inexplicable, as this region is most prone to tertiary accidents." The regions we have mentioned are the usual seat of the mucous patch; but it is to be remembered that it may and sometimes does occur upon any other portion of the mouth. There are certain characteristics of all of the forms of mouth syphilis to which I must direct your attention. These remembered will assist you

materially in forming your judgment as to the character of any sore you may have before you in a mouth: First. They are nearly painless, unless irritated mechanically or chemically, or by tobacco; Second. Any irritation of them provokes a great secretion of saliva. Indeed, where they are numerous, a kind of salivorrhea is often present, the patient dribbling saliva during his waking and sleeping hours; Third. They all tend not only to disappear spontaneously, but also to recur indefinitely, more especially in users of ardent spirits, or abusers of tobacco, or those who chew toothpicks and gum; Fourth. They all have the modified circinate form seen in syphilides elsewhere.

Though tertiary syphilis may effect any of the structures entering into the formation of the mouth, it is upon the tongue and soft palate that its ravages are principally spent. The tongue may be attacked by a general infiltrative inflammation: First, superficial, the small round cells being packed into all the tissues lying outside of the muscle bed; or second, deep, the same process extending into and between the muscles of the tongue. The superficial form of syphilitic glossitis, when it occurs, makes its appearance about the fifth year after infection. The induration produced may be uniform, spreading over the entire surface of the tongue, a veritable hyperplasia, or it may be confined to a number of nodular patches. The surface of these latter is smooth and glossy-like, and for the same reasons as the peculiar mucous patch, which I have shown you upon the patient R———. Syphilitic glossitis is slow in developing, and resists treatment. It may last for many years in spite of all treatment, finally ending in atrophy. The tongue becomes stiffened and interferes with talking and swallowing; indeed, it is the interference with these functions which first draws attention to its condition. Sometimes it grows so large as to require surgical interference. Any chronically enlarged tongue, unless proven otherwise, may be regarded as syphilitic.

The British Journal of Dental Science for January, 1896.

"ORAL SURGERY," by Edmund W. Roughton, B. S., M. D. (Lond.), F. R. C. S. Eng. Tumours of the Palate. These are not common, but they are of many different kinds. They present a general resemblance to tumours of the salivary glands. They

are more common in the soft than in the hard palate, and on the left side than on the right. Most of them grow slowly, are painless and quiet, and therefore often unnoticed for many years.

Dermoids. Dermoid tumours are occasionally met with in the middle line of the hard or soft palate. They vary in size from that of a hazel-nut to that of an orange; they are often pedunculated. In some cases the tumour is solid and is covered with skin bearing hairs and sebaceous glands, and in others the tumour forms a cyst, the inside of which is lined by skin. In one recorded case the tumour was no less than eight inches long and five or six broad, and protruded from the mouth of a newborn child, causing great impediment to respiration. The tumour contained rudimentary limbs and generative organs and four inches of intestine, as well as nodules of bone and cartilage. Small pedunculated dermoids may be easily ligatured and removed. The larger tumours may necessitate a very formidable operation.

Epithelial Pearls. These are minute bodies consisting of concentric laminæ of horny epithelium; in some the epithelium forms onion-like layers without any tendency to cornification. They are very commonly found in new-born children, situated in the middle line and near the posterior margin of the hard palate, in the alveolar processes, and on the anterior surface of the gums; they are also found in other parts of the body at the lines of reflection of epithelial surfaces. They are produced by the retention and subsequent moulding of shed epithelium in the recesses of sebaceous glands, in mucous crypts or in folds of epithelial-covered surfaces. According to Bland Sutton, those pearls found in the middle line of the palate are the result of inclusion or sequestration of portions of epithelium in the process of fusion of the palatine processes of the two maxillæ, but Kanthack has shown that they are due to ingrowths of epithelium resembling the enamel organ and can always be traced to the surface. It is possible that the small superuumerary teeth sometimes found lodged in the mucous membrane over the meso-palatine suture are formed in this way. Epithelial pearls are only of pathological interest; they produce no symptoms and do not require treatment.

Cysts. Cystic tumours of the palate are very rare. In addition to the dermoid cysts already alluded to, a few cases have

been observed in which dental and dentigerous cysts have made their way toward the hard palate, producing a fluid tumour in that situation. Jourdain has recorded a case of blood cyst occupying all the left half of the palate.

Vascular Tumours. Tumours composed of dilated veins like nævi have been observed on the palate; they are of a purple or livid tint, and of a soft doughy feel; they have a tendency to bleed, and may vary in size from time to time. Aneurysms of the posterior palatine artery have occasionally been met with. In most cases they have been the result of injury. Electrolysis is the best means of curing these tumours.

Polypi. Polypoid growths of the palate are delicate out-growths of connective tissue attached by a slender pedicle either to the uvula or to the soft palate. Sometimes they are symmetrical. They do not occur on the hard palate. Their surface is covered by stratified epithelium and is finely wrinkled, or roughened with minute filiform papillæ like those of the tongue; their lymph spaces are well developed and their blood vessels large. They are commoner in men than in women, and are very seldom met with in childhood. They may exist for years without producing any symptoms and may be found out only by accident. Sometimes they produce a tickling at the back of the throat and repeated efforts at swallowing. They should be snipped off with scissors.

Papillomata. These are more common on the soft palate than on the hard, but sometimes they may extend over the whole palate. In microscopic structure they resemble other papillomata; sometimes they are pedunculated, and sometimes they are sessile or attached by a short broad pedicle. They often grow without discoverable cause, but are sometimes of syphilitic origin. The symptoms are the same as those of polypoid tumours. They should be removed with knife or scissors; the bleeding which follows removal may be very free, but can be controlled by pressure or by the actual cautery. Caustics are of little or no use.

Adenomata.—The term adenoma, as applied to tumours of the palate, has a clinical rather than a pathological significance. It means a tumour slow in growth, innocent in nature, firm, limited, and, as a rule, shelling out easily. Adenomata are equally com-

mon in men and in women. They occur about puberty and between the ages of forty and fifty. They are much more common in the soft palate than in the hard. Their growth is extremely slow and they produce so few symptoms that they usually remain a long time without giving any trouble or even without being noticed. They are rounded or oval with their long diameter from before backwards. They are usually elastic, sometimes so much so as to give the impression that they are fluid, but sometimes they are hard and tough. The mucous membrane covering the tumour may be thinned from pressure, but it very rarely adheres or ulcerates; it generally remains healthy, freely movable and unbroken over the growth. The structure of these tumours is extremely complex; they contain masses of epithelial cells without any very definite shape or arrangement, part being developed into gland tissue, part breaking down into irregular tracts of a hyaline granular material, and part forming cell nests or epithelial pearls. Blended with the epithelial structures is a quantity of embryonic connective tissue, myxomatous tissue, or fully formed fibrous tissue.

Treatment. Adenomata can nearly always be enucleated. For this purpose sufficient anæsthesia can often be obtained by injecting a 2 per cent. solution of cocaine under the mucous membrane. The mucous membrane should then be incised, taking care not to wound the tumour itself. If the growth is in the soft palate, enucleation is greatly facilitated by passing a finger into the nasopharynx and pushing the soft palate and the tumour forward; hæmorrhage may be stopped by continued pressure.

Sarcomata. Those found in the palate are mostly of the round-celled variety. They are rarer than the adenomata; they occur with equal frequency in men and in women, and more often in the soft palate than in the hard. They are most often met with in persons of forty or older, and do not occur in young subjects. They grow much more rapidly than the adenomata. They are malignant, although the degree of malignancy varies. Some are distinctly encapsuled, whilst others are devoid of capsule. Those tumours which extend downward into the region of the tonsil are more malignant than those which advance forward lying *in* the soft palate and *on* the hard palate; the latter are more likely to be encapsuled.

Treatment. If the tumour be not very large, not of rapid growth, and not adherent to the tonsil or pharynx, it should be removed by enucleation. But if the tumour is of more rapid growth, and extends far back toward the tonsil and pharynx, a much more extensive operation will be required, very likely necessitating tracheotomy and ligature of the carotid. In such a case the surgeon must carefully consider the case in all its aspects, and must not embark on such a severe operative procedure unless there is a reasonable hope of removing the whole disease.

Carcinomata. Carcinoma of the palate is a rare disease. There are two varieties, viz., squamous epithelioma, which begins in the surface epithelium, and medullary carcinoma, which begins in the deeper parts of the mucous membrane. Squamous epithelioma usually begins in the gum and invades the palate secondarily. Sometimes it ensues upon long standing psoriasis or warty disease of the palate. The disease presents the same characters as epitheliomatous ulceration elsewhere, the glands are affected early and extensively, and death ensues in a short time. The medullary form of carcinoma differs from that just described in that a distinct tumour is formed which soon adheres firmly to adjacent structures, grows rapidly, and ulcerates in its centre. It is even more rapidly fatal than epithelioma. It is only seldom that these formidable tumours are seen early enough to give the surgeon a chance of performing a successful operation. A happy result can be hoped for only when the disease is diagnosed very early and very freely removed.

Cystic Disease of the Antrum. Small cysts, about the size of a pea or a marble, are sometimes discovered in the interior of the antrum in dissecting-room subjects; they have probably caused no symptoms during life. Similar cysts, when larger or more numerous, may distend the antrum and produce swelling of the face. According to Giraldes, these cysts result from dilatation of the glandular follicles of the mucous membrane. They contain at first a clear viscid fluid, but later the fluid becomes flaky from the presence of cholesterine, or may become purulent. Cystic distension of the antrum was formerly designated "hydrops antri," on the supposition that the antrum became distended with mucus, due to blocking of the ostium maxillare. The symptoms of cystic distension of the antrum are almost identical with those of

dental or dentigerous cysts growing into the antral cavity, and it is but rarely that a certain diagnosis can be made until the antrum has been opened and explored. When suppuration occurs the symptoms are those of empyema of the antrum.

Treatment. The antrum should be opened through the canine fossa and the cysts scraped out. During the healing process the cavity must be kept clean by syringing with suitable antiseptics.

Polypi of the Antrum. These are somewhat rare. They closely resemble nasal polypi in structure, and the same doubt is entertained in both affections as to whether the tumour is of inflammatory origin or a true new growth. They are well supplied with blood vessels and consequently bleed readily on interference. In some cases they are semi-malignant or may be the forerunners of malignant disease. These polypi do not often give rise to definite symptoms of their own. They are most often discovered when the antrum has been opened and explored on account of prolonged suppuration. Sometimes, however, they grow to sufficient dimensions to cause distension and absorption of the walls of the antrum and encroach upon the neighboring cavities, especially the nose. The treatment consists in removing the polypi through a large opening in the canine fossa and scraping away the diseased mucous membrane with which they are connected.

Fibroma. Fibromata of the upper jaw may spring from two situations—the periosteum of the alveolus and that lining the interior of the antrum. It is probable that many cases described in the older works as fibroma have really been instances of fibrous odontomes which have escaped recognition. Fibromata arising within the antrum grow very slowly, but if allowed to remain may attain a considerable size and may cause much damage to the surrounding parts; the walls of the antrum become absorbed and displaced, allowing the tumour to escape from the antrum and to project into the orbit, into the nose, into the mouth, into the zygomatic fossa and under the cheek.

Enchondroma. Enchondromata of the maxilla are very rare. They occur in young subjects and may grow either on the surface of the bone or inside the antrum. They are of slow growth and innocent in nature, although sometimes recurrence may take place after removal. They are very hard and usually nodulated on the surface; on section they present close-set nodules or masses of

cartilage partly and irregularly ossified and intersected by more or less fibrous tissue. They may attain a great size and produce distension and destruction of the maxilla and other facial bones in the same manner as fibromata. Some of the enchondromata formerly described were probably examples of chondrifying sarcomata.

Osteoma. True osteomata of the maxilla are very rare tumours. Many cases hitherto described as such have been examples of leontiasis ossea, hard odontomes and ossifying sarcomata. Irregular outgrowths of bone are sometimes met with on the alveolar border, but they are of no clinical importance.

Neuroma of Infra-Orbital Nerve. Bland Sutton has recorded a case in which a neuroma composed of myxomatous tissue grew from the infra-orbital nerve and invaded the cavity of the antrum. The surface of the tumour was covered with a layer of mucous membrane furnished with a ciliated epithelium. The tumour had caused intense suffering.

Sarcoma. Sarcomata are the commonest and most important tumours of the maxilla. As in other bones they may be central or peripheral. Central sarcomata grow from the cancellous bone between the shells of compact tissue. They may be myeloid or round-celled in structure. Myeloid sarcomata are much rarer in the maxilla than was formerly taught, many cases thus described in our museums and in the older works being examples of fibrous odontomes containing a few osteoblasts, and sarcomata arising in the follicles of developing teeth. They usually grow in connection with the nasal process and occur in young subjects; they are of slower growth and are less malignant than the other varieties of sarcoma. When growing from the alveolar process and projecting on the gum they constitute the "myeloid epulis" already described. They may also bulge into the antrum, distend its cavity, and absorb its walls like other tumours. In some cases of myeloid sarcoma the blood vessels are so numerous that they cause the tumour to pulsate, and they give it a structure somewhat resembling erectile tissue; they are known as vascular tumours or vascular sarcomata. Sarcomata of tooth follicles are composed of round and spindle cells, with a few myeloid cells interspersed. They occur only in children and usually involve the germ of the first permanent molar. They are at first encap-

suled, but eventually reach the surface, ulcerate and give rise to hemorrhage. The neighboring glands may become affected. Peripheral or periosteal sarcomata may spring from any part of the maxilla. They frequently grow from the periosteum of the antrum, distending its cavity and behaving clinically like a central tumour of bone, although pathologically of periosteal or peripheral origin. They are fairly common on the gums and rare on the palate. In structure they may be either round-celled or spindle-celled; the latter variety often contains cartilage and bone. The maxilla may also be invaded by sarcomata starting in the nose, naso-pharynx or orbit.

Epithelioma. Epithelioma of the maxilla occurs in persons beyond middle life, usually about 45 or 50. It may start in the gum, the palate, or in the interior of the antrum. Epithelioma of the gum and palate has already been referred to. Epithelioma of the antrum may be primary or secondary, i. e., the disease may start in the antrum, or it may invade the antrum after having started in the gum or palate. Primary epithelioma is a rare disease; it forms a very vascular tumour of a villous nature which fills the antrum and rapidly perforates its walls in various directions, causing at the same time a certain amount of distension of the cavity, but not nearly so much as the sarcomata. It may be composed of columnar cells, like those covering the mucous membrane of the antrum, or of spheroidal cells, like those lining the mucous glands. Secondary epithelioma is nearly always of the squamous variety. It is a very insidious disease; no definite tumour is formed, and there is no distension of the antral cavity, but there is extensive and very rapid destruction of its bony walls. The disease is often first discovered on extracting a tooth with a piece of soft growth attached to the roots. The socket does not heal, but soon becomes filled with a fungating mass; it will then be found that the socket is in direct communication with the antrum, and that the latter is already diseased. To this disease the name "epithelioma terebrant" or "boring epithelioma" is often applied. In all forms of epithelioma of the jaws the disease is very rapid and the lymphatic glands in the neck are very extensively involved. The size of the lymphatic swelling may be out of all proportion to the primary disease, so much so that the patient is often led to seek advice on account of the glandular swelling, the

primary growth being discovered only on careful examination of the mouth. The enlarged glands are at first very hard, but they soon soften to such an extent that they may be mistaken for an abscess.

Diagnosis. To make a correct diagnosis of tumours of the maxilla is often very difficult, sometimes impossible. The history of the case must be carefully considered, the more rapid the progress of the disease the more likely it is to prove malignant. A careful physical examination must be made; the points to be especially noted are the condition of the cheek and the character of any swellings there may be on the face or inside the mouth, the condition of the hard and soft palate; the nasal cavity must be examined by means of a speculum and artificial light, aided, if need be, by careful use of the probe; in doubtful cases the finger may be introduced into the naso-pharynx to feel for any extension of growth in that direction. Sometimes the diagnosis may be cleared up in a doubtful case by extracting a tooth, and so either evacuating pus or other fluid, or bringing away a piece of growth which can be submitted to microscopic examination. An examination of the submaxillary glands should not be omitted.

Having made a thorough examination, it is necessary to determine (*a*) whether the swelling is solid or fluid, (*b*) whether it is innocent or malignant, and (*c*) its primary seat. (*a*) In cases of distension of the antrum by fluid the uniform enlargement of the cavity, the elasticity and even fluctuation which may sometimes be detected on palpation may suffice to make the diagnosis; but whenever there is any doubt on this head the antrum should be perforated with a small trocar introduced into the most prominent part of the swelling. It has happened that experienced surgeons have made the incisions necessary for removal of the maxilla and have then found out that the supposed malignant growth was nothing more than an abscess. (*b*) So long as the tumour is confined within the antrum much difficulty will be experienced in determining whether it is innocent or malignant, but when a malignant tumour has passed beyond the cavity of the antrum it grows with great rapidity, insinuates itself extensively amongst the bones of the face, creeps through fissures and foramina and encroaches on the orbital and nasal cavities. Obstruction

to nasal respiration and repeated attacks of epistaxis are suggestive of malignant disease. Early and extensive infiltration of the lymphatic glands points to epithelioma; in sarcoma they frequently escape infection. (*c*) When the tumour occupies the interior of the antrum, the buccal, nasal, palatine and orbital walls are expanded and the line of the teeth is often disturbed; but when the tumour springs from the malar bone, the teeth and palate are unaffected, the swelling being limited to the face and the sulcus between the cheek and the gum; when the tumour springs primarily from behind the maxilla it pushes it bodily forwards without deforming the outline of the bone itself, but it sometimes happens that such a tumour may find its way into the antrum and behave as one originating in that cavity.

The Ohio Dental Journal for December, 1895.

"FILLING A TOOTH WITH AMALGAM," by W. M. Jennings, D. D. S., Cleveland. For example, I will use a second lower left molar tooth, with a posterior proximal cavity extending considerably under the gum and involving about two-thirds of the crown. Of course, from the size of the cavity, the nerve would be exposed, and having removed it and filled the roots properly I would proceed as follows:

Prepare the cavity, having the edges smooth and the inside slightly larger than the opening; then fill it about two-thirds full with a good cement and allow it to harden. After this trim the edges of the cavity, so that no cement adheres to them, and also trim the cement inside just enough to leave a sufficient undercut and space to allow contouring of filling. Now select a screw matrix of suitable size for tooth (German silver or steel are the best, as they do not amalgamate) and put around the tooth, crowding down under the gum sufficiently to go below the edge of the cavity, but before tightening put another piece of German silver between the tooth and band matrix, also below the edge of the cavity; now tighten the band. Before putting in the filling take an excavator and trim the borders of the cavity and remove all roughness of edge next to matrix, if any has been caused by putting it on; we are now ready for the filling. Mix the amalgam very dry, having it resemble an almost dry powder, and carry it to the cavity with a small amalgam spoon; press a small

quantity into the cavity with a plastic plugger of the proper size; now with engine use a small size (smooth, round) burnisher and rotate it quite rapidly in cavity. Add more amalgam and use burnisher same as before, and do so until the cavity is full and the amalgam is quite hard, then with a larger burnisher rotate it rapidly over a piece of tinfoil placed on the filling. Trim the filling down and carefully remove first the screw matrix, then the other one. Now trim the filling as near as possible to the original shape of the tooth, seeing that the articulation is right. Polish at another sitting. A filling put in in this manner is much better and more satisfactory than by simply using hand pressure, and does not change position in crystallization as in the other way, as the tin takes up all excess of mercury, leaving the filling almost hard after it is inserted.

Zahnarztliches Wochenblatt for January, 1896.

"REPORT ON NARCOTIZATIONS IN GERMANY," by Von Gurlt, of Berlin, trans. by Dr. B. J. Cigrand. The last year has developed the following report and statistics relative to the several anæsthetics, as employed in medicine. Of the 47,515 cases of narcotization the report shows:—

	Cases.	Fatalities.	Doubtful.
Chloroform	31,803	23	8
Ether	15,712	5	1

It is indeed proven to be a fact that it is difficult to determine to a certainty the exact statistics of mortalities, with reference to the methods employed in producing the anæsthesia. It is especially difficult to ascertain whether the fatality is the result of the anæsthetic or of disease. In the report of the last five years the mortality stands: One death results from 1,275 Chloroform narcotizations; 3,143 Ether narcotizations; 10,662 Chloro-ether narcotizations; 50,044 Billroth's mixture narcotizations; 4,483 Bromoform narcotizations; 213 Pental narcotizations.

In recent years ether has been employed more frequently than chloroform, and has been used thirty-three times oftener this year than the preceding. The fatalities are relatively few, but the disagreeable after-results are very many. Many persons rebel against the inhalation of ether, as an unconquerable cough sets in, which increases the secretion of phlegm and saliva, and

bronchitis and broncho-pneumonia are observable as well. During the last year, of the 15,712 narcotizations produced with ether, thirty cases of pneumonia resulted, fifteen of which proved fatal.

The Dominion Dental Journal for January, 1896.

"The Saliva in Prognosis," by W. D. Cowan, L. D. S., Regina, N. W. T. In filling teeth, and in deciding what material to use, the temperament of the patient will certainly help us; so, also, will the saliva, I believe to a much greater extent than we generally accept, and that because it is a means of revealing to us, to a certain extent, the susceptibility of the patient to pain, and to these influences which produce pain, some patients, because of a blunted sense, being less subject to these influences than others. I have noticed in my practice that it is seldom that any of my patients in whose mouths the saliva is of a thick, mucid, stringy character, and gathers in little bubbles at the corners of the mouth when the lips are closed, or forms strings, as it were, from one lip to the other when the mouth is open, or who has a gummy, sticky, generally filthy looking deposit of greater or less extent from the saliva on the lips forming a light circle at the point of contact of the lips, are troubled with the pains, etc., after the tooth is filled. I have therefore become very confident of success in filling cavities in the teeth of such a patient by using only the ordinary precautions and following the usual procedure. On the other hand, if my patient is one who is gifted with an excess of saliva, and that of the most watery description, I would not attempt an all metallic filling, unless the cavity was of a very shallow nature. In other words, a filling that I would insert for the first patient, with only ordinary precautions, I would for the second patient use extraordinary precautions, probably a heavier capping, a combination filling, or at least proceeding as if I knew beforehand that the tooth was going to be subject to after influence.

"Pyaemia as a Sequellae of Pyorrhoea Alveolaris," by A. E. Verrinder, L. D. S., Victoria, B. C. The following case may be regarded as a typical representation of the most persistent form of this disease. A gentleman came under my care some three weeks since, who had been for some two years past under treatment by different members of the medical profession. They

had all treated him for the same malady—malaria—and his last physician had ordered a complete change, in order to save the patient's life. Taking advantage of his vacation to have a troublesome molar attended to and filled, he consulted me to repair the wrong. Making a careful examination of the entire arch, which consisted of an unbroken denture, I found very little requiring attention. Remarking on the general state of his bad health, and noticing his cachectic condition, I touched the right chord, and he recited his miseries of the past two years, and his looks did not belie his words, he being resigned and prepared for the worst. On further inspecting the oral cavity I found a marked receding of the gums, and, probing, found a diseased process almost in its entirety. On pressure, a foul, unhealthy pus exuded—the first intimation I had of any odor. My suspicions now being aroused, I questioned him minutely in regard to the symptoms, and I found a febrile condition, with coated tongue and a temperature of 103°. He complained of headache, constipation, dizziness, sleeplessness, loss of appetite, and at times during the last twenty-four hours, nausea. Noting the conditions, I told him he had "no more malaria than I had," but was suffering from the absorption of this septic matter. To convince him I placed the hand-mirror in such a position as to give him a view of the exuding pus, furnishing evidence that something was wrong. He accordingly concluded to try my suggestions, with the result that after a vigorous and stimulative treatment—both systemic and local—combined with proper antisepsis, he began to improve rapidly, and a week since he journeyed home, expressing himself a strong and healthy man for the first time in two years.

At this writing I have received no further communication, so conclude all is favorable. No doubt, from the slovenly way in which he had attended to the hygiene of his mouth, matters had gone from bad to worse, and, having almost a perfect arch of teeth, considered he had no use for the services of a dentist, while the absence of any severe local symptoms led his physicians astray, and from the resulting absorption of this septic matter blood-poisoning had actually set in. This form of disease is very prevalent on the Pacific coast, whether from the influx of an already unhealthy people, or directly attributable to the climate itself, I do not know, but I do know that these cases are more or

less numerous with all British Columbia practitioners, although not so far advanced as to produce such severe constitutional symptoms, except in rare cases as stated. I feel justified in asserting that as many deaths occur from supposed malaria, when it is simply absorption of this septic matter and complications arising therefrom, as from genuine malarial fever.

The Dental Register for January, 1896.

"SOME THOUGHTS ON THE COMBINATION OF AMALGAM AND GOLD," by Dr. F. W. Knowlton, read before the Ohio State Dental Society, Dec. 4, 1895. I hardly need state that the same care and judgment are necessary in the application of this, as of all filling materials, if we would attain the results which are possible. It is when we make a use of filling materials other than that for which they were intended that they are unable to withstand the criticisms passed upon them, and are condemned in consequence of a lack of proper discrimination. Many times this combination can be used and better results follow than when gold or amalgam alone are relied upon, and in not a few cases in which it would be impossible to obtain the desired end with any other material. The plea that two sittings are necessary in order to complete such a filling no longer holds, for with good alloy and plastic gold such objections are overcome with entire success, although in some cases there is an advantage in allowing the amalgam to harden and complete with the gold at a subsequent sitting. The satisfaction of knowing that there is a perfect union between the amalgam and gold, giving you practically one material, is certainly something in its favor. I do not think that this kind of work will make slovenly operators of us, for the care necessary for its successful insertion is best realized by those who are familiar with its workings.

As an illustration, we will take a lower molar tooth, medium in texture, the proximal surface badly undermined, usually extending on the occlusal surface. Under existing circumstances we may dislike to put in amalgam, and hesitate to insert a gold filling, but if we can combine the two, retaining the better properties of each and avoiding the less desirable ones, is it not a good practice to follow? In such a case the different parts of the cavity are prepared consonant to the metal it is to receive, the

lower third, or possibly half of the cavity, depending somewhat on the size of the same, made suitable for an amalgam filling, the remainder of the cavity prepared for gold, this to be retained in place independent of the amalgam portion. Adjust the matrix securely, and at the lower third or half, as the case may be, perfectly, so there will not be the least danger of any of the amalgam being forced out around the matrix. Insert the amalgam in the usual way, filling the cavity rather full, and then remove it down to the proper amount. In this way the portion that remains will be quite hard and free from excess of mercury. Insert the plastic gold immediately, forcing it on to the amalgam with large points at the start, continue adding to the gold until it finally overcomes the mercury, then complete the filling in the ordinary manner. Remove the matrix and finish as you would any gold filling, noting the ease with which you are able to dress down the filling at the cervical margin without any great annoyance to the patient. The galvanic action which takes place as a result of the contact of the different metals causes the oxides and sulphides to be deposited on the amalgam more abundantly than when it is used alone, consequently this portion of the filling becomes quite black, which to many is a commendable feature, preventing recurring delay at that vulnerable spot, the cervical margin, whether mechanically, by filling the dentinal tubules, chemically, therapeutically, or by all combined we leave to each one's choice, but this we do believe, that the results obtained justifiy the means. There is no bulging, crevicing, or disintegrating of the amalgam under the galvanic action, for it remains just as left after it receives the finishing touches. The gold portion of the filling serves us in its own good way, preserving its own and the margins of the tooth as only gold can, under the strains to which the teeth are subjected in this location during mastication; and that important part of the operation, that of reproducing the original contour of the tooth, which tends to preserve the health of the surrounding tissues and makes a presentable piece of work in the eyes of the patient, can best be accomplished with gold. There is a pronounced diminution in the number of troublesome cases caused by the extremes of heat and cold, more so than when either metal is used alone under like conditions, but this must not be taken as an argument that we need not use precaution.

"DIAGNOSIS OF LESIONS OF THE HEART BEFORE ADMINISTERING ANÆSTHETICS," by W. H. Whitslar, D. D. S., read before the same society. It is a serious problem when anæsthetics are given, to whom and under what conditions they may be administered. This is of such importance that every practitioner should consider well the advisability of assuming the responsibility of the care of an individual in an unconscious state. The topic before us, therefore, opens up to my mind these questions:—(*a*) Do lesions of the heart interfere with anæsthesia? (*b*) Is diagnosis of the lesions an easy matter? (*c*) How may diagnosis be made? (*d*) What are the responsibilities?

Let us consider these questions. (*a*) Every human body has three circulating fluids, i. e., blood, lymph and chyle. The blood in man is proportioned to the weight of the body, as one is to thirteen, and this ratio is indicative of physical value aside from that of the vital. Of course we realize its worth in vital organization, because it is the provider of foods to the various tissues. It is also the scavenger that takes away impurities. It at one time or another contains everything about to become part of the tissues and everything which has ceased to belong to them. Morphologically, blood consists of plasm and corpuscles, red and white, also blood platelets. There is one white-blood corpuscle (leucocyte) for every five hundred red corpuscles. Blood being a circulating fluid, it is attended by three factors, i. e., its propelling force, fluidity, and size of vessels. All these, the heart, the plasm, thickened or thinned by numbers of corpuscles, and the lumen and area of vessel walls, modify the velocity of the blood current. Disturbances in either of these factors produce changes in the circulation of the blood. Now, if the circulation of the blood be disturbed by anything for an undue length of time, disease is the result. We may, however, cause a transgression from the natural course for a short time by emotion, change of position of the body (gravitation), over-indulgence in food, and not seriously affect the blood currents, but these would, if too pronounced, manifest unusual disturbances in the action of the heart; therefore, from so simple an illustration it is easy to conceive changes wrought in the blood by the introduction of a vapor that poisons its composition sufficiently to produce that state known as anæsthesia. These changes are rendered less agreeable to the

vital economy in proportion to the diseased conditions. Hence, lesions affect anæsthesia proportionately to their diseased condition, and less proportionately, to their compensated states found with lesions of the heart, simply because of the vitality of the organs being insufficient to resist greater ingress of unnatural bodies. The blood itself has most to do with anæsthesia, but this cannot move continuously without a propelling force, and if that be weakened you perceive the result.

(*b and c*) The greatest modifications of the circulating apparatus are to be found in the heart which forces blood to every nook and cranny of the body. The problem of knowledge of the diseases that affect the heart's action is partly physical, partly vital. Diseases of the circulatory apparatus are associated to a great extent with certain mechanical disturbances called lesions. This is owing to the fact that these organs subserve mechanical purposes and the regular rhythm is maintained by the pump arrangement and its distributory canals. To understand this class of diseases one must resort to physical methods of examination. Three of the great senses are used in this examination, which includes an *Inspection* of the size and form of body externally; *Palpitation*, feeling the movements of walls of the thorax as well as heart; *Percussion*, which relates the condition of density by sounds; and *Auscultation*, also relating to sounds more specific in character. The pulse plays a significant part, as I will illustrate later on.

In order to comprehend the various lesions which produce sounds or other defects, one must be familiar with the normal heart's action. Normally, there are six sounds of the heart, as follows: two vibrations of the auricular-ventricular valves, two vibrations of semi-lunar valves, and two vibrations of walls of large vessels. Generally speaking these are resolved into two sounds, the systolic or first sound, by the contraction of the ventricles felt at the apex of the heart, and the diastolic, or second sound, heard at the base of the heart, by the sigmoid valves of the aorta and pulmonary artery.

All these sounds are functional; if altered they become organic, and then it is that we perceive disease. Alterations may arise from fevers, fatty degenerations or hypertrophies. Want of synchronous action of the valves of the two sides split one or the

other into component elements, so that either sound may be re-duplicated. Any condition which increases the lesion, either in the systemic or pulmonary circulation, may disturb the balance of the two sides so as to dispose to a re-duplication of the sounds.

Cardiac sounds may be replaced by murmurs in the heart or outside of it. These have a blowing, rasping, sighing, and other characteristics. To determine these and their significance, two important facts must be studied, namely, their rhythm and their area of distribution.

The diseases of the heart and its valves, which produce mechanical disorders of the circulation by establishing abnormal relations, are of two kinds: obstructive and regurgitant.

Valvular disease, narrowing the size of the orifice, presents an obstacle to the passage of the blood currents, a condition better known as *stenosis*. On the other hand, when the blood flows back through an orifice of imperfect closure of the valves, due either to widening of the orifice or valvular changes, the condition is called regurgitation or insufficiency. Each of the orifices may be affected with one or both forms of the disease, but the frequency with which the several orifices are attacked varies. Generally the left side of the heart is affected by organic disease. The right is disturbed by lung diseases which cause increased tension leading to dilatation. All valvular diseases tend to lessen the arterial blood and there is an over-fulness and a stasis of the veins. From this there follow visceral disorders. This is often diverted by compensation to form a normal balance. In this we find that hyphertrophy assists by increasing the contractile power behind the defective valve. This produces greater tension in the vessels. Any failure of compensation is due to loss of nutrition, then occurs palpitation from slight exertion or excitement. From thirty to forty per cent. of all cases unassociated with other lesions are of *mitral* insufficiency. (Pepper.) Under chloroform, heart failure as a rule is due to fatty degeneration or mitral or aortic valvular lesions.

Now to diagnose these various lesions, endocarditis, myocarditis may be present and affect the tissues so as to produce alterations of sounds or conditions. Then, too, temporary affections of the heart may be produced by diseases of the liver. Murchison states that it is not rare to observe enfeebled circulation in hep-

atic disorder. It is believed by Faber and others that biliary acids have direct action upon the cardiac muscle. Independently of palpitations, syncope, and painful affections, nervous disorders, cephalalgia, insomnia, hallucinations, and so on, are secondary to hyphertrophy as a sign of disease. A common sign is palpitation. This is sometimes symptomatic of dyspepsia, therefore is not pathognomonic. It is on this account that many persons think they have heart disease, when it is only a reflex irritation from the digestive organs. It is often supposed by the ordinary observer that intermittency of the pulse is an indication of heart lesions. This is common in men of advanced age. It is a nervous trick and bears no significance if it is a pure halt of the heart. Intermittency with irregularity may be found in fatty degeneration of the heart or during fevers. In valvular disease the value of the pulse is best known by the use of the smygmograph, but this is generally impracticable because it does not assist as much as the physical diagnosis directly over the heart by the methods already mentioned. Now I mention these facts to show that diagnosis of lesions of the heart is not an easy matter, and that a knowledge of not only the heart, but lungs and visceral organs is required to comprehend fully cardiac diseases. By the fact of difficulty of diagnosis of these affections it is more apparent that responsibility is serious. The use of an anæsthetic is attended with appreciable risk and the life of the patient is endangered. Occasionally there is a death. Dr. William Pepper states that, "on the whole, sudden death is rare from valvular disease." This, if true, favors the ignorant man who uses an anæsthetic, and there is no doubt that it saves many lives that are jeopardized by ignorance. The law, however, does not recognise ignorance, even if the ignorant be careful; he must have a knowledge, then skill.

The Dental Cosmos for January, 1896.

"COCAIN," by Dr. E. J. Hausle, Buffalo, read before the Union Convention of the 6th, 7th and 8th District Dental Societies of N. Y. State, at Binghamton, October, 1895. In excavating cavities I have had little success with the hydrochlorate in allaying pain, but the citrate gave gratifying results when used in one-fifteenth of a grain, although the sensation at first was of a stinging character.

For painless extraction I have tried the citrate and the oleate, but without success, and to me the only sure way is the use of the hydrochlorate hypodermically. The way the solutions are generally prepared seems almost criminal to me, as we have no knowledge whatever of what strength we are using. For instance, if we wish to use a four per cent. solution, eighteen grains of the salt are placed in an ounce bottle, which is then filled with water, accuracy being thus utterly disregarded.

Many times we hear complaints that cocain did not in any way lessen the pain of extraction, and the drug is condemned on that account. I have found that from two to four minutes should elapse between injection and extraction to obtain the best results.

During the past six years I have used cocain in my practice extensively, with both gratifying and alarming results. It is claimed by some writers that two-fifths of a grain injected hypodermically will not produce the desired result, but in a few of my cases two-fifths, and even one-fifth of a grain have given results which perhaps were not desired, owing to their alarming symptoms.

My first experience in this line was some five years ago, when I was requested to extract a root for a married lady. The gum was cleansed of all deposits by a solution of boracic acid, and then one-fifth of a grain of cocain injected on both sides of the root; immediately there was a collapse of the system, the skin became cold and moist, respiration almost suspended, and pulse feeble; all consciousness seemed lost.

Another patient, a young lady of eighteen, received one-fifth of a grain, injected around the gums to relieve the pain of setting a crown. Immediately she lost consciousness, pulse became erratic, at times ran as high as 140, and again so low that death seemed certain. Respiration seemed entirely stopped, and the eyes fairly bulged out of their sockets. After working some time with her she seemed to rally, only to pass off in the same state as she was, and this continued for several hours. During this time anesthesia seemed complete over the whole body.

Several other and equally interesting cases of mine I must omit for want of time. One day, while visiting a fellow-practitioner, he injected cocain, how much I cannot say. The tooth was extracted, and then the trouble began—cold, moist skin,

suspended respiration, an erratic heart, and vomiting. One drachm of whiskey injected hypodermically, artificial respiration, amyl nitrite, and one hour's work brought him around all right. All these patients were closely questioned regarding their condition, and I found that either the stomach was without food for at least six hours, or that (in the cases of the women) they were either pregnant or catamenic. Accordingly I started to experiment on rabbits, by injecting one-tenth of a grain. On those that were well fed it seemed to have little effect. The males withstood it better than the females. Two out of three of the females that were about to have young died. They were all well fed. Those that had not had food for twelve hours showed more alarming symptoms, and one male and one female died out of three each. Two bucks had no food for twenty-four hours, and both died. In none of my experiments was any remedy tried, as I wished to see the exact result the drug would have. When I have desired antidotes I have used the very best amyl nitrite, atropia, whiskey and ether subcutaneously.

It is better to prepare the solution as it is needed, as it decomposes after three days, or it may be kept perfectly for ten days if held in solution in chloroform-water; but if solutions must be had on hand at all, try to have ten parts of antipyrin to one part of cocain. I have known but one death that was the result of cocain. On examination after death, the brain, lungs, and left side of the heart were filled with blood. Records show that in the past few years about fifty cases of poisoning are reported annually, of which on an average two result fatally.

"Local Anæsthesia and Obtundents," by Dr. F. J. Woodworth, Rochester; read before the same societies. The author dealt with the various methods in vogue for obtunding sensation in the operations of tooth-extraction, excavation of hypersensitive dentine, and in pulp-devitalization. He contended that obliteration of of hypersensitiveness of dentine could be best attained by one of the three following methods, viz: by removing a portion of the protoplasmic contents of the peripheral ends of the tubuli and filling this space with some insoluble matter; reducing the temperature of the protoplasm until it was unable to conduct sensation, or coagulating the terminal endings of the fibrillæ by chem-

ical means. For the first-named purpose he advocated the use of asbolute alcohol, which, because of its affinity for moisture, would thoroughly remove sensation by removing a portion of the protoplasmic elements during the process of desiccation following the use of the alcohol. When the dentine has been thoroughly desiccated by the alcohol and warm-air blast, an application of some resinous material in alcohol was to be applied and then evaporated *in situ*. The resin solution would permeate and permanently fill the tubular openings to a certain depth, and to that extent would prevent a recurrence of hypersensitiveness, though the structure beneath the impregnated area would still be normally sensitive. As a general escharotic obtundent the authority recommended carbolic acid applied after desiccation, though in sensitiveness at the cervical border, or when caused by abrasion, silver nitrate might be used to advantage; or, if necessary, carbolic acid could be followed by zinc-chlorid cystals in such cases. Refrigeration, where applicable, may be accomplished by rhigolene, methyl or ethyl chlorid.

The practice of filling sensitive cavities with oxyphosphate for obtunding purposes he had found to be unsuccessful in his hands.

For hypodermic injection in extracting he uses—

R—Alcohol, dr. vij;
Glycerol, dr. ij;
Carbolic acic, gr. x;
Camphor, gr. ss;
Atropin, gr. j;
Cocain hydrochlor.. gr. viij;
Nitroglycerin, gr. j.

The carbolic acid acts as a coagulant circumscribing the action of the cocain. The atropin counteracts the toxic effect of cocain, but may be substituted with antifebrin twenty grains, or possibly menthol thirty grains, with good results. As an antidote the author recommended amyl nitrite as the best and most reliable.

Care in hypodermic medication must be exercised not to penetrate with the needle any of the larger blood-vessels or nerves. A cocain solution that was stronger than two per cent should not be used, and antidotes always kept in readiness for an emergency.

Discussion. Dr. F. A. Greene, of Geneva, said that, with regard to local anesthetics, it is a dangerous subject, and would better be left severely alone. The use of rubber plates never did one-hundredth of the harm to dentistry that the use of local anesthetics has. The great majority of them are secret, are bought and used without knowledge as to their components, and when trouble occurs the dentist knows nothing of what should be done to counteract the effects. Gas is both safer and more satisfactory for use in extracting. For obtunding dentine, the better way is to avoid preparations for diminishing the sensitiveness, and simply dry out the cavity carefully and use sharp instruments. If the cavity is wet, the bur will clog up and cause heat and pain from friction; and besides, the work cannot be seen properly. His plan is to apply the rubber-dam, with an apparatus which he showed, which consists of a small cup containing a coiled copper tube immersed in water. The cup has a lamp beneath it to keep the water hot, and the tube is arranged so a current of air is forced through it by means of a foot bellows or bulb. Using this to furnish a constant current of hot air, he can excavate the most sensitive dentine with almost no pain, and the cavity is absolutely dry and in the best possible condition for filling. The lamp being lit when the apparatus is ready for use, raises the temperature of the air from the normal of the mouth so gradually that the heat gives no discomfort. In many cases of nearly exposed pulps the heat will cause the thin layer of dentine over the pulp to crack open, and the pulp will be seen shriveled up like a shred of leather, and can be removed with no trouble or pain.

Dr. F. W. Low said he had had much experience with dental obtundents. He thought the best was arsenite of potash. It was said that it could be placed in a tooth and capped over with good result in sensitive dentine. He determined to try it, and asked a chemist, who told him he thought it might be used with safety and good effect. He procured a supply, and selecting such patients as had sensitive dentine, would place the potash in the cavity and cover it, leaving it in place for ten to twelve hours. He found that the dentine could then be excavated with little or no discomfort. Had never had any bad effect until his last case, a girl of fifteen. He had left the preparation in the cavity for twelve hours, as usual, but found it had no effect, so he made

another application and left it in twenty-four hours. Then the operation was performed and the tooth filled. Ten days afterward the patient returned with face swollen and suffering intensely. The filling had to come out, and he was still treating the tooth, but had little hope of ever saving the pulp. This experience would teach him to be a little cautious about leaving the preparation too long in the tooth.

TONSILS AND APROSEXIA.—Mr. Downie, in a paper read before the Medical Chirurgical Society of Glasgow, alludes to the impairment of the cerebral function due to disorders of the nose and naso-pharynx. Guye, of Amsterdam, first described the condition which he styled "Aprosexia," and he attributed it to pressure being exerted on the lymphatics, preventing the current of the cerebral lymph and causing retention of the products of the chemical processes in the tissues of the brain. Mr. Downie alludes to the vacant expression of those suffering from post-nasal growths, who are of necessity "mouth-breathers," and he says that in addition to the look of stupidity the children are usually stupid and backward in everything calling for mental effort, and aprosexia is a marked feature in most cases. In Guye's first case a boy with complete nasal obstruction had been to school for a year and learned only the first three letters. After the removal of a mass of adenoid tumours from the naso-pharynx he learned the whole alphabet in a week.—*Brit. Jour.Dent. Sc.*

LIQUID AIR.—Professor Dewar has exhibited at the Royal Institution the working of a new apparatus for the production of liquid air with a degree of ease not hitherto attainable. Around a cylindrical vacuum-jacketed vessel Professor Dewar closely coils a metallic tube. This is inserted into a second vacuum-jacketed vessel, the result being that the metal tube is protected from external heat by a vacuum both inside and outside the coil. The inner end of the tube has a pinhole orifice which acts as a stopcock, and the other end is connected to a bottle of condensed air at a pressure of, say 200 atmospheres. On opening the stopcock of the air reservoir, the condensed air passing through the coil to the bottom of the outer vacuum vessel is enormously cooled by expansion on passing the pinhole. It has no mode of escape, save by forcing its way upwards between the metallic coil and the glass walls which surround it outside and in. By its passage the coil is powerfully cooled and the condensed air passing through it reaches the nozzle at a lower temperature than before. After this process has been carried on for a few minutes liquid air makes its appearance at the nozzle and collects in the outer vacuum vessel, where, in a few minutes more, quantities of 70 or 80 cc. can be obtained with ease. The process is facilitated by cooling the condensed air on its way to the coil, as by passing the tube through solid carbonic acid. With this refinement liquid air appears in three or four minutes, and collects with great rapidity. The new apparatus does not appreciably reduce the heavy expense incident to experiments at low temperatures.—*Brit. Jour. Dent. Sc.*

Letters.

A PLEA FOR CO-OPERATION FOR PROTECTION.

NEW YORK, Feb. 12, 1896.

My dear Dr. Crouse:—As to "deferring" brethren, those who have shown no disposition to listen to your persuasive advice, I feel an utter hopelessness. They are past all understanding. I have in no case infringed any body's patent, and do not intend to, but I like to feel that there is a "protective" arm somewhere to stop any *nonsense*, should it be attempted. I doubt the propriety of *begging* dentists any longer to act the *manly* part and come within the protective fold, yet I would have every member of this profession within its embrace, so that we could show a united front. What a power that would be. Very truly yours,

J. W. CLOWES.

ALLOY AND CEMENT FOR FILLING.

Manatee, Fla., Feb. 9, 1896.

To the Editor of the Dental Digest,

DEAR DOCTOR:—In the January DIGEST is an article by C. W. Strang, entitled "Failures and Causes," wherein he advises a mixture of cement and amalgam for filling teeth, but cautions his readers that "it cannot be successful in the presence of moisture," by which I understand him to mean immediate exposure to the saliva after completing the filling. I use a method that is a great success in such immediate exposure to the buccal fluids; is much easier to perform; gives a much better color to surface of filling and to thin overhanging enamel; will wear better, and is as unshrinkable as the mixture Dr. Strang uses.

It is as follows: Procure good alloy and cement; mix the alloy as dry as will work well; press into a flat button, the thickness of a silver dime, for an ordinary cavity. Mix the cement so as to bring it to its stickiest condition; then, the cavity having been dried and kept so, fill with the cement, and quickly, before it begins to set, press onto it a plate of amalgam about the size of face of exposed cement. Press this plate into the cavity, allow-

ing cement to escape slightly at all parts so far as practicable. With the ball end of very small burnishers perfect the union of amalgam to the edges of the cavity and then contour by the addition of necessary amalgam. Experience with this plan for over eleven years gives me such faith in it that I have not filled a single cavity with amalgam without the cement for five years past, and I believe the time will come when the use of amalgam without some such lining of the cavity will be considered malpractice.

This use of cement saves much discomfort to the patient from making undercuts or retaining points, also from thermal changes, and other advantages enumerated above. Yours truly,

W. E. DRISCOLL.

DR. DWINELLE'S DEATH.

NEW YORK, Feb. 14, 1896.

To the Editor of the Digest,

MR. EDITOR:—Dr. Wm. H. Dwinelle died at his native place, Cazenovia, N. Y., yesterday, Feb. 13th, at the age of seventy-five years.

Dr. Dwinelle has been a remarkable person from a dental standpoint, and would undoubtedly have been so in any calling he might have chosen, for he was unusually endowed. He has stamped himself upon his calling in a very decided manner. We do not recall any such practitioner, as we have observed him from the truly practical dealing. He closes up the influence on the lines he has worked, and he has left no one of his teachings that bears any portaiture of him in his works. There are a few of his marked examples of ability in handiwork that would cause most practitioners to observe with marvel. We refer to his operations in filling; just such we have never seen from any hands; they look like molten gold and have a glow of finished surface that is equal to "Tiffany jewelry." This work that we have seen was done before the days of modern mechanical devices.

Dr. Dwinelle has had a clientage as remarkable as his works. It would cause wonderment to the coming generation to see the list of patients in his address-book and the amounts set against their names for service rendered. Nothing like it today. He

has truly been king among the dental practitioners of the world. We believe that no one, unless it is possible that Dr. Thomas Evans of Paris may have been his equal in this regard, for Dr. Evans' patients have been the kings and queens of Europe. Nevertheless, between $30,000 and $40,000 yearly by hard labor is not a small emolument to bank, and the Doctor was a hard-working practitioner in those palmy days from 1850-75. This view of his practice has its lesson, although it is far from being the acme of purpose.

All through his earlier days he emphasized his calling with his pen and did much to stimulate men to better efforts in practice. His writings will be found back in the Forties, and among them will be seen many things that are considered new in these days. Not infrequently would he be seen coming into society meetings with back copies of dental literature (this in latter years) and a smile would creep over the knowing ones' faces, for it was sure that he had a claim of originality to settle, and he seldom failed to do it.

For the last half-dozen years Dr. Dwinelle was not in a proper state of mind and body for practice, but necessity urged him forward until difficulties settled down upon him, and nearly four years ago he retired to his native place. Little by little his mind ebbed away, so that life became an unconscious existence, which was certainly a mercy to him during the last few months of his life.

We have no such stamp of men left. How rapidly our ranks have been deprived of late of the men whom we have known and to whom we have looked up. Yours truly,

G. ALDEN MILLS.

NEW YORK LETTER.

NEW YORK, Feb. 20, 1896.

To the Editor of the Digest,

MR. EDITOR:—"Pyorrhea" is flowing actively between Chicago, New York and Philadelphia. Dr. Talbot has tapped the run this time, in addition to Dr. Curtis, and with Dr. Rhein before the Odontological in March, may we not hope to get somewhere.

Dr. Dawburn, of the New York Polyclinic Hospital, gave to the New York Institute of Stomatology, on Tuesday, Feb. 4th, a

series of surgical clinics, together with a lecture which was a success in point of attraction from the general surgical standpoint, but hardly from the modern view, as dentists look at oral surgery from a conservative standpoint. Atkinson and Garretson have checked the inroads of general surgery from producing ugly disfigurements of the face by scars. Not so was this exhibition of Dr. Dawburn's, for he was intent on the line of operation.

One thing we must mention, because we, as dentists, have been held up to criticism by the New York *Medical Record* as careless in antiseptic care. The dental practitioners present who witnessed these clinics criticised the lack of antiseptic care shown, especially in one case which had been successfully operated upon for nasal sarcoma, the patient very much degenerated, and another exhibiting a degenerated case of the mouth, intimated to be of doubtful character. Leaving out the possibility of any chance of infection, we do not think that dentists would have neglected antiseptic measures, and we believe that dentists are, as a rule, fully as careful as physicians.

We have it direct that a new dental school is on the tapis in Philadelphia.

Dr. Williams' paper, in the February *Cosmos*, will attract more than ordinary interest, both because of the writer's ability, and because his views are opposed to Prof. Heitzman's. All lovers of investigation can view these additional articles only with pleasure, for they will invite discussion, and in this way the truth can be brought out.

We often hear regret expressed that Dr. Williams could not have remained in America. His citizenship is in London, but American journals publish his writings.

Dr. Talbot has paid a visit to New York. We hear his paper read at Philadelphia very favorably commented on. It looks as though "Uric Acid" was not going to do all the talking.

The Odontological Society commenced having clinics, preceding the evening meeting of each month, last Tuesday. They will doubtless prove an attractive feature.

Dr. St. George Elliott gave a paper before the First District Society on "Absorbents." He is fertile in useful things.

New York societies are fully warmed up now for winter work, but New York weather is the coldest in twenty-five years—8 degrees below zero. Cordially, NEW YORK

The Dental Digest.

PUBLISHED THE

TWENTIETH DAY OF EVERY MONTH.

Editorial.

THE RECENT LITIGATION ON THE LOW BRIDGE PATENT.

At the time of going to press it is impossible to give our readers any detailed information as to the result of this suit, which was argued last month. In the January DIGEST we gave the three points at issue which made up the defence in this suit, and we repeat them here: 1st, defect in the title and assignment; 2nd, that Low's first application was for an entirely different device from the one on which suit is now pending; 3rd, that Low was not the inventor, but that what he claimed as new and useful was neither new nor useful. We also stated that the complainants were confident they would win in this suit.

By way of encouragement we can state that we have come out ahead in the preliminary skirmish. We expect to be able to give the full details in our next issue. In the meantime the members of the Protective Ass'n should make every possible effort to get those not in the Association to join at once.

DENTAL EXAMINING BOARDS AND PRELIMINARY EDUCATION.

In this issue of the DIGEST we publish a paper by G. Carleton Brown which should have appeared last month, but a press of other material compelled us to delay it. Since then, however, it has appeared in the *International* for February, and in the same number is an editorial in reply.

The article in question is of such a nature, and makes such charges and criticisms on dental colleges and on some of the college graduates who come before the State boards, one of which

the writer is a member of, that we feel it deserves more than a passing notice. We cannot adopt the views of the editor of the *International*, either as to the objection made to State laws governing the qualifications of those entering the profession, nor can we see the impropriety of publishing the answers made by some of the applicants.

It is perhaps true that the governors of states are not as well informed as to who are the best qualified to fill the positions of examiners as they might be, but this difficulty is overcome, in a measure at least, by the advice given by members of the profession. Furthermore, in some instances the state societies have recommended a number of men to the governors and given them a list from which to choose.

To argue against laws requiring certain qualifications on the part of those who wish to practice in a profession which has to do with health, and even human life, shows a lack of wisdom and observation. The more especially as these laws have been in practical operation in many states and have been of infinite benefit and great protection to the citizens of such states. Besides being a safeguard to the community, the effort to obtain better education and preparation for so responsible an occupation as the practice of dentistry should be a source of gratification to the dental colleges. For surely these State laws have been the means, more than anything else, of increasing the number of students in colleges, so much so that many of them are now overcrowded with pupils studying in order to meet the requirements imposed by the laws. If there were no such laws, it is safe to presume that many of those now in the colleges would not be taking the course laid out by reputable dental schools, but would have started to practice without that preparation which is so necessary, and to which we are sure the colleges are the best aids now in existence.

If the answers of applicants, which are given as from college graduates, represent but a minority, such a condition is disgraceful simply in proportion to the number of such graduates, and the "war on the colleges" should be in the same degree. We would suggest that the different State boards bring their examination papers to the meeting of the National Board of Examiners each year, thus furnishing one aid in ascertaining what qualifica-

tions are required by the various colleges, and adopt rules accordingly. Surely the boards of examiners can bring about any needed reforms, and we look for great good resulting from their future work.

There are other abuses spoken of in Dr. Brown's article which, if true only in part, should not pass unnoticed; however, lack of space and time prevents us from discussing them now, but we shall discuss this important subject further in future issues.

REMARKABLE MISQUOTATION.

We are led to write this editorial by the statements which the editor of the *International* ascribes to us, and which we did not make.

In an editorial concerning Dr. Brown's paper, in the February No. of that journal, the following appears: "The following advice, quoted from Dr. Crouse, would be excellent if it were at all new, but as it is not we repeat it here simply to answer an unjust criticism. 'Now as to the student's mechanical adaptability, * * * if he hasn't it in his fingers * * * he will never make a dentist, and of this fact the colleges have, as yet, taken no notice * * * Therefore, the first six weeks of the college course should be spent in finding out who are properly qualified by nature, as well as by training, to be dentists.' The ignorance of college work displayed in this quotation is most remarkable."

If our readers will turn to Dr. Brown's article in this No. of the DIGEST they will see that we made only the last statement of the foregoing quotation, beginning with 'Therefore'. Part of the first sentence of the same quotation is Dr. Brown's own language, while the phrase, 'if he hadn't it in his fingers,' Dr. Brown ascribes to Dr. Eaton.

A little further on in the same editorial the editor says, "We cannot follow this unfair and untruthful denunciation of college work." Considering that Dr. Brown's article is published in the *International*, and that all the quotations in question are contained in thirty-six consecutive lines, it would seem that the editor of that journal not only could not follow, but that he also could not or did not read the "denunciation."

The 'ignorance' of which he accuses us we should say was his

own, in that he does not know how to make a quotation, and very evidently does not understand what a Dean's duty is as regards the young men who desire to enter the profession. He says, "It is hardly to be questioned but that every effort has been made for years, during the first session or Freshman year, to examine critically into the inclination and ability of each separate student. It is a difficult and not always a pleasant task, but yet a duty which each Dean must perform. In this effort to weed out the incapables, we have no doubt but that each Dean has discovered a decided opposition from the individual as well as parents and guardians. It is rarely that good advice of this character will be received in the spirit in which it is given. To expel a man because his abilities are supposed not to be of the highest order has not yet become a law of colleges, and we hope it may never be so long as the possibilities of development are without limitations."

Now we may be mistaken, but we should judge from this statement that the writer thinks it better to allow a man to continue his college course, even if he is not over well adapted to be a dentist, than to advise and even, if necessary, compel him to give up his studies and try something for which he is more fitted. We should say that the real kindness, and the Dean's duty, as well, when the student is unfitted by nature and does not possess the peculiar requisites to make a good dentist, is to show him his mistake before he has spent much money and three years' time, instead of trusting to the 'possibilities of development' and allowing him to find out his mistake by sad experience, arising from failure. It is safe to say that at least one-third of those who take the three years' course and get their diplomas should never have been allowed to take up the study. Who is responsible for the wrong to the community, to the profession, and to the unfortunate individual who has wasted his money and time, and who either makes a miserable failure of dentistry, or else, after a futile effort to make a success of his chosen profession, drifts into something else?

NOTICE CONCERNING THE INDEX.

An index of the DENTAL DIGEST for 1895 is sent out with every journal this month. Owing to the illness of the editor, and to a press of other work, it was omitted from the December issue.

Notices.

ILLINOIS STATE BOARD OF DENTAL EXAMINERS.

This Board will meet Saturday, March 21, 1896, at the Sherman House, Chicago, for the examination of candidates for license, and for the transaction of other business. All persons wishing to be examined must send their names to the secretary at least one week prior to meeting. L. L. DAVIS, Sec'y.,
1207 Columbus Mem. Bldg., Chicago.

INTERSTATE DENTAL MEETING.

The State Associations of Nebraska, Iowa, Kansas and Missouri have arranged to hold a large joint meeting at Excelsior Springs, Mo., June 23-26, 1896. Most of these states have abandoned their regular annual meeting, and preparations are now about completed which assure every dentist who attends a rare treat. The program embraces five papers and six clinics from each state, besides a number to be furnished by distinguished men from other states. No dentist in these states can afford to miss this meeting.

S. C. A. RUBEY, Sec'y.,
Clinton, Mo.

TOPICS FOR DISCUSSION BY STATE AND LOCAL ORGANIZATIONS.

1. Should not the appointment of Dental Examining Boards be under the control of the State dental societies?

2. Should not the granting of certificates of qualification by examining boards to non-graduates be generally abolished?

3. To what extent is the washing of amalgam masses an important feature in the production of a gold filling?

4. What results are to be expected in replantation or transplantation as a means of treatment of chronic phagedenic pericementitis?

5. The committee earnestly recommend that the report of the Committee on Dental Nomenclature of the American Dental Association be fully studied and discussed.

LOUIS JACK,
J. N. CROUSE,
EDWARD C. KIRK,
Committee on State and Local Organization.

News Summary.

TREATMENT OF SOFT CORNS.—Doctor Miall, in the *British Medical Journal*, declares that an ounce of perfectly freshly made tannin dissolved in six

drachms of water with the aid of gentle heat, if applied once or twice a day between the toes after washing, gives immediate relief to soft corns. Tannin in powder is not so effectual.

To Remove Tattoo Marks.—Make a mass, the consistency of dough, with salicylic acid and glycerin; apply to the tattoo marks, and confine with a compress and strips of adhesive plaster for one week. Then remove the layer of epidermis over the marks, and apply salicylic acid and glycerin as before. It may be necessary to repeat three times, but usually the second application removes the marks.—*Medical Brief.*

Mumps.—The incubation period varies from eighteen to twenty-two days, and the malady is especially contagious during this period, but is also contagious after convalescence, the exact length of time, however, not having yet been determined. Frequently the disease begins with tumefaction of the submaxillary glands and a severe angina. Metastatic orchitis sometimes begins with an epididymitis.—*Le Courrier Medical.*

An Interesting Experiment.—Doctor Schleich, of Berlin, recently gave an interesting demonstration at the Sydney (New South Wales) Hospital. He induced local anæsthesia by the injection of a saline solution into the tissues surrounding the part to be operated upon. The theory is that the pressure of the fluid paralyzes the nerve extremities, and therefore removed all chance of pain. The demonstration was altogether satisfactory, both to the patients operated upon and to the attending surgeons.—*Australian Journal of Pharmacy.*

Chloroform Asphyxia.—Konig-Maas's method of restoring persons apparently dead from chloroform, as practiced at the Gottingen clinic:—The operator, standing on the left of the patient and facing him, places the ball of the thumb of the opened right hand upon the patient's chest, between the place of the apex beat and the sternum. He then repeatedly presses in the thoracic wall with a quick, strong movement, at the rate of about one hundred times per minute. The results by this method have been very satisfactory.—*Brit. Jour. Dent. Sc.*

Alveolar Dental Hemorrhages.—Dr. Otto Arnold, in Oct. *Cosmos*, says: My universal method of procedure in the management of hemorrhage following tooth-extraction, is to have the patient rinse the mouth freely with hot water. This encourages free and uninterrupted bleeding from the wound and stimulates a normal reaction in the tissues, soon followed by a natural cessation of the hemorrhage. If any considerable amount of lacer ıtion has taken place, I attempt to replace the tissue by compressing with the fingers or stitching into apposition any pendant portion of the gum, prescribing as a dressing, to be applied frequently to the wound: Tannic acid, gr. 20; Listerine, oz. 4; Aqua dist., oz. 4.

A REQUEST TO SUBSCRIBERS.

If you have been taking the DIGEST the past year, and have not sent in your subscription for 1896, won't you do so at once?

There are a few who have not paid yet for 1895, and if you should happen to be one of them, won't you attend to this matter at once?

Help us along by recommending the DIGEST to others, and by sending us ARTICLES, NEWS ITEMS, INCIDENTS OF PRACTICE, NOTICES, LETTERS, SOCIETY PROCEEDINGS, ETC.

AN EXPLANATION TO OTHERS.

If this should happen to be the first copy of the DIGEST you have ever seen, please examine it carefully and see if it is not just the journal you want. Besides many original contributions each month, the journal contains a summary of all the best that is in the other journals, in fact, all the important news of dentistry.

We will send you the DIGEST for Oct., Nov. and Dec., 1895, and the whole of 1896, for the price of one year's subscription, $2.00, in advance.

Take it and save your time and money.

EUTHYMOL

To any Doctor of Dental Surgery who will enclose to us his professional card, we shall be glad to send a trial package of Euthymol free of charge.

A few drops of Euthymol in half a glass of water removes all disagreeableness from the mouth and leaves a delightful sense of cleanliness.

Whitens the Teeth.
Sweetens the Breath.

Offensive odor of the breath may be overcome by the habitual use of Euthymol. Have patient add a teaspoonful to half a glass of water and gargle thoroughly; and take internally three or more times daily 20 to 30 drops in a little water.

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